Gateway



# 6400 Server System Manual

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# Preface

## Conventions used in this manual

Throughout this manual, you will see the following conventions:

| Convention | Description |
|---|---|
| ENTER | Keyboard key names are printed in small capitals. |
| CTRL+ALT+DEL | A plus sign means to press the keys at the same time. |
| **Setup** | Commands to be entered, options to select, and messages that appear on your monitor are printed in bold. |
| *User's Guide* | Names of publications are printed in italic. |
| Viewpoint | All references to front, rear, left, or right on the computer are based on the computer being in a normal, upright position, as viewed from the front. |

**Important**



A note labeled important informs you of special circumstances.

**Caution**



A caution warns you of possible damage to equipment or loss of data.

**Warning**



A warning indicates the possibility of personal injury.

# Getting additional information

Log on to the technical support area of www.gatewayatwork.com to find information about your system or other Gateway products. Some types of information you can access are:

- Hardware driver and program updates
- Technical tips
- Service agreement information
- Technical documents and component information
- Frequently asked questions (FAQs)
- Documentation for peripherals or optional components
- Online technical support

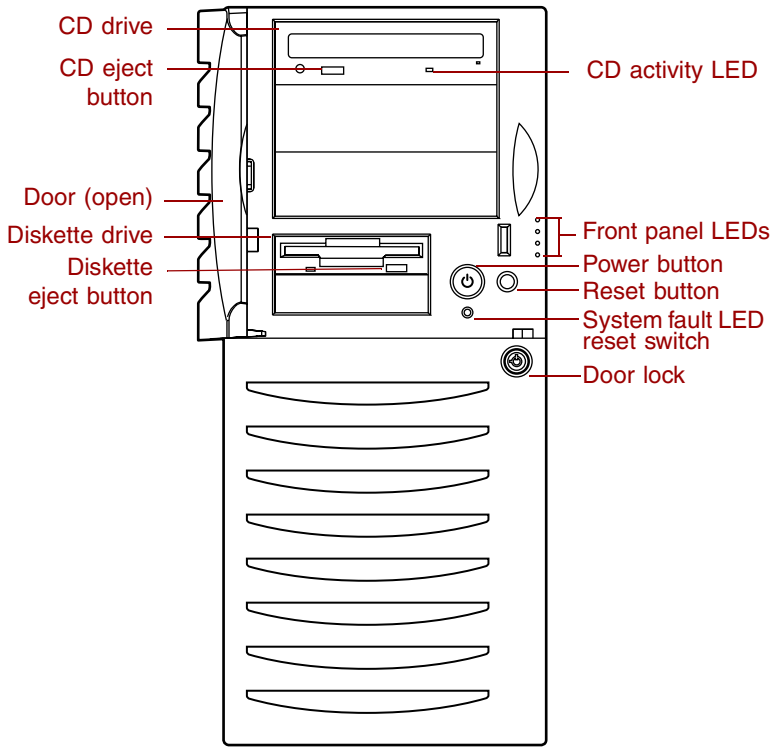
# System Features

1

## Standard features

- As many as two Pentium® III (FC-PGA Socket 370) processors with 133 MHz Front Side Bus (FSB)
- Four Dual Inline Memory Module (DIMM) sockets that support up to 2 GB of PC133 Synchronous Dynamic Random Access Memory (SDRAM)
- ServerWorks LE 3.0 chipset
- Integrated Intel 82559 LAN controller
- Integrated dual channel Ultra160/Ultra3 SCSI
- Integrated ATI Rage-XL VGA controller with 4 MB of PC100 SDRAM
- Seven PCI slots (Two 64-bit/33 MHz slots and five 32-bit/33 MHz slots)
- Integrated Voltage Regulator Modules (VRMs) for both processors
- ATX form factor system board and mid-tower chassis
- One 3.5 inch 1.44 MB diskette drive, one CD drive, and one hard drive
- Keyboard port (PS/2®), mouse port (PS/2), 2 serial ports, parallel port, two Universal Serial Bus (USB) ports, one RJ-45 LAN connector, and one VGA port

# Front panel




**CD activity LED**, when lit, indicates the drive is active.

**CD drive** plays data or audio CDs.

**CD eject button** ejects a CD from the CD drive.

**Diskette drive** writes to and reads from 3.5-inch, 1.44 MB diskettes.

**Diskette eject button** ejects diskettes from the diskette drive.

**Door** protects the external controls of the computer and the externally accessible drives.

**Door Lock** controls access to the external controls and externally accessible drives.

**Front panel LEDs** indicate the following when lit:

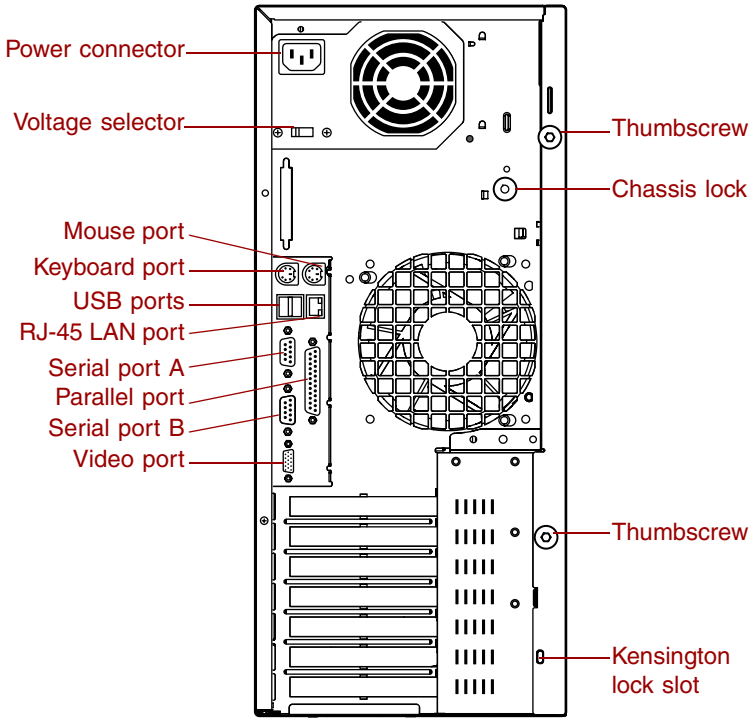
- **Power On LED** (steady green indicates power is on and blinking green indicates system is in sleep mode).
- **HDD Activity LED** (green) indicates when hard drive is active.
- **NIC Activity LED** (green) indicates LAN activity.
- **System Fault LED** (yellow) indicates ECC (Error Checking and Correcting) memory system fault (steady indicates an uncorrectable ECC fault and blinking indicates a correctable ECC fault).

**System Fault LED reset switch** is used to clear system fault LED.

**Power button** turns the computer on and off. It also enables sleep-mode in some operating systems.

**Reset button** restarts the system when it becomes non-responsive.

# Rear panel




**Chassis lock** locks the side cover to secure the interior of the system.

**Kensington lock slot** lets you use a cable lock to secure the system.

**Keyboard port** connects a PS/2-compatible keyboard.

**Mouse port** connects a PS/2-compatible mouse.

**Parallel (printer) port** connects a printer or other parallel device.

**Power connector** connects the computer power cord. The other end of the power cord plugs into an AC outlet or power strip.

**RJ-45 LAN port** connects to an ethernet network.

**Serial ports** connect to serial devices.

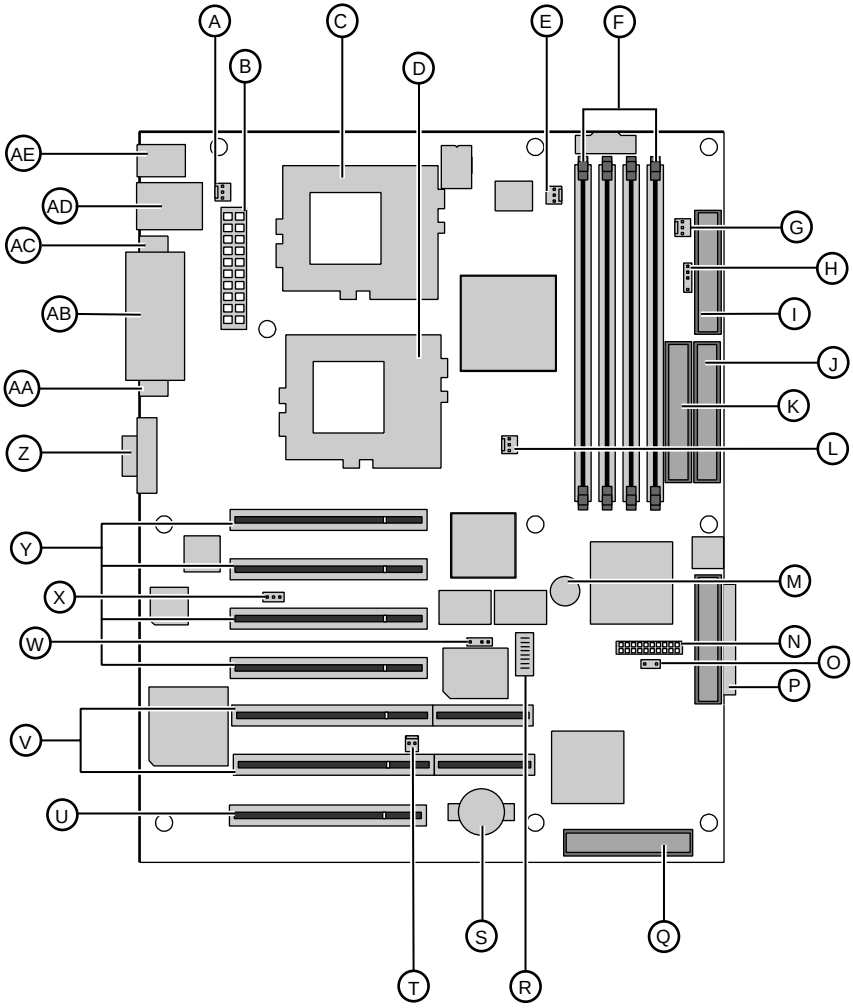
**Thumbscrews** must be loosened to remove the cover from the system.

**USB ports** connect external Plug-and-Play devices that are automatically configured when they are plugged into the computer through one of these ports. USB keyboards and mice are not supported, use only PS/2 versions.

**Video port** connects the monitor interface cable.

**Voltage selector** sets the voltage for your area, either 115 V or 230 V.

# System board




**A** Rear Chassis Fan connector

**B** Main ATX power connector

**C** CPU 1 socket

**D** CPU 2 socket

**E** CPU 1 fan connector

**F** DIMM sockets (0 to 3, left to right)

**G** Front chassis fan connector

**H** $I^2C$ SMB header

**I** Floppy drive connector

**J** Primary IDE connector

**K** Secondary IDE connector

**L** CPU 2 fan connector

**M** Speaker

**N** Front panel connector

**O** Auxiliary HDD activity LED connector

**P** Ultra160 LVD SCSI Channel A connector

**Q** Ultra160 LVD SCSI Channel B connector

**R** Configuration switch

**S** Battery

**T** (not used)

**U** PCI 32-bit/33 MHz slot

**V** PCI 64-bit/33 MHz slots (2)

**W** (not used)

**X** (not used)

**Y** PCI 32-bit/33 MHz slots (4)

**Z** Video port

**AA** Serial port B

**AB** Parallel port

**AC** Serial port A

**AD** RJ-45 Ethernet port and USB ports 1 and 2

**AE** Keyboard port and PS/2 Mouse port

# 2

# System Setup

## Setting up your system

Use the instructions on the Quick Guide poster that came with your system to assemble your system.

You can prepare a safer working environment before assembling your system by following these guidelines:

- Use a clean, flat, and stable surface for your system. Allow at least 12 inches at the rear of the computer for cabling and air circulation.
- Obtain a grounded (three-prong) AC surge-protected power strip. A surge-protected power strip helps protect against AC power fluctuations.
- Protect your system from extreme temperature and humidity. Do not expose your system to direct sunlight, heater ducts, or other heat-generating objects.
- Keep your computer away from equipment that generates magnetic fields, such as unshielded stereo speakers. Even a telephone placed too close to the computer may cause interference.
- Plug the computer into a wall outlet or power strip that is easily accessible.

**Important**



Keep the computer boxes and packing material in case you need to send the computer to Gateway for repairs. If you return your computer in different packaging, your warranty may be voided.

# Starting your system

Before you start your system for the first time:

- Make sure that the voltage selector switch on the back of the computer is set to the correct voltage for your area. This switch is set at the factory to the correct voltage (see “Rear panel” on page 4 for the voltage selector switch location).
- Make sure all cables are firmly connected to the proper ports on the rear panel of the computer.

**Caution**



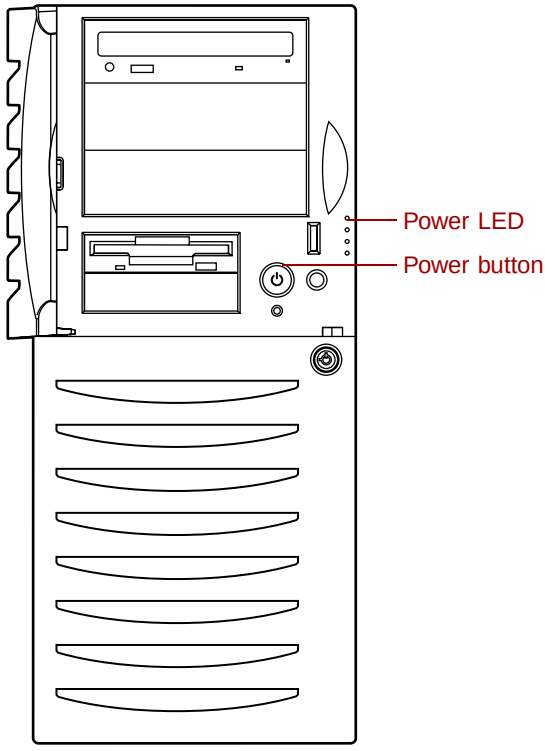
Make sure your computer and peripherals are turned off and unplugged from the power outlet when you connect peripherals to the computer, or you might damage the computer or the peripherals.

- Make sure the computer and monitor are plugged into an AC outlet or power strip and that the power strip is turned on.

## To start the system:

1. If you have connected the system components to a power strip, make sure all the system components are turned off, then turn on the power strip.
2. Turn on the monitor.

**3** Turn on the computer. The top light-emitting diode (LED) at the right side of the bezel is lit when the power is on.




**4** Turn on any other components connected to the computer, such as speakers, a printer, or a scanner.

If nothing happens when you turn on the system:

- Make sure that the power cables are securely plugged in and that your power strip (if you are using one) is plugged in and turned on.
- Make sure the monitor is connected to the computer, plugged into the power strip or AC outlet, and turned on. You may also need to adjust the brightness and contrast controls on the monitor.

# Understanding the Power-On Self-Test

When you turn on your computer, the power-on self-test (POST) routine checks the system memory and components. To see this information on the screen, press TAB during POST.

The system displays error messages if POST finds any problems. Write down any error messages that you see. If you continue to have problems, these error messages may help technical support diagnose the cause.

# Setting up the operating system

The first time you start your computer, the operating system takes a few minutes to set up.

Refer to your operating system documentation for specific questions regarding the operating system.

## To complete the operating system setup for Windows NT:

1. After the computer starts, the start-up wizard opens. Continue by clicking **Next**.
2. Type the requested information in the appropriate text boxes. When you have finished typing the information, continue by clicking **Next**.
3. Continue following the instructions and selecting options in the start-up wizard dialog boxes, clicking **Next** to move through the dialog boxes, until the wizard tells you to restart your computer.

   If you need to return to the previous dialog box to change any of your entries, click **Back**.
4. Restart your system. The setup is complete.

**Important**



For other operating systems, such as Windows® 2000 or Novell® NetWare, refer to the appropriate operating system software manual for setup instructions.

# Turning off your system

Every time you turn off your system, shut down the operating system first. You may lose data if you do not follow the proper procedure.

## To turn off your system in Windows NT:

1. Click **Start**, then select **Shut down the computer?**, then **Shut Down**.
2. Click **OK**. The computer turns off. If you see a message saying **It is now safe to turn off your computer**, turn off the computer by pressing the power button.
3. Turn off the monitor and peripherals.

**Warning**

When you turn the computer off by pressing the power button, some electric current still flows through the computer. Before opening the computer case or connecting or removing any peripherals, turn off the computer, then unplug the power cord and modem cord (if installed) or you may get an electric shock.

**Important**

For other operating systems, such as Windows® 2000 or Novell® NetWare, refer to the appropriate operating system software manual for instructions.

# Resetting your system

If your computer does not respond to keyboard or mouse input, you may have to close programs that are not responding. If closing unresponsive programs does not restore your computer to normal operation, you may have to reset the system.

## To close unresponsive programs and reset your system in Windows NT:

1. Press CTRL+ALT+DEL. A window opens that lets you to close a program that is not responding.
2. Click **Task Manager**, then select the program that is not responding.
3. Close the program by clicking **End Task**.
4. If the computer does not respond, press the reset button to restart the computer.

   As a part of the regular startup process, a program to check the disk status runs automatically. When the checks are finished, Windows starts.

**Important**



For other operating systems, such as Windows 2000 or Novell NetWare, refer to the appropriate operating system software manual for instructions.

# 3

# Case Access

## Preventing static electricity discharge

Before opening the computer case, follow these precautions to prevent damage from static electricity. When opening your computer case, always perform the following procedure.

**Caution**



Static electricity can permanently damage electronic components in your computer. Prevent electrostatic damage to your computer by following static electricity precautions every time you open your computer case.

### To prevent static electricity discharge:

1. Wear a grounding wrist strap (available at most electronics stores).
2. Turn off the computer power.
3. Touch a bare metal surface on the back of the computer.
4. Unplug all power cords from AC outlets and disconnect the modem cable (if installed).

Also follow these static electricity precautions:

- Avoid static-causing surfaces such as plastic and packing foam in your work area.
- Remove the parts from their antistatic bags or containers only when you are ready to use them. Do not lay parts on the outside of an antistatic bag or container because only the inside provides antistatic protection.
- Always hold cards by their edges and their metal mounting brackets. Avoid touching components on the cards and the edge connectors that connect to expansion slots. Never slide cards or other parts over any surface.

# Opening the case

**Important**



All references to front, rear, left, or right on the computer are based on the computer being in a normal, upright position, as viewed from the front.

To work on the internal components of the computer, you must open the case, which has two removable parts:

- A left side cover panel that permits access to the interior of the case
- A bezel that covers the front of the chassis

Because the components inside your computer are extremely sensitive to static electricity, make sure to follow the precautions at the beginning of this chapter for avoiding static electricity damage.

Only qualified personnel should open the system for maintenance. If you are qualified to maintain the system yourself, make sure you are properly grounded before opening the system chassis.

**Warning**

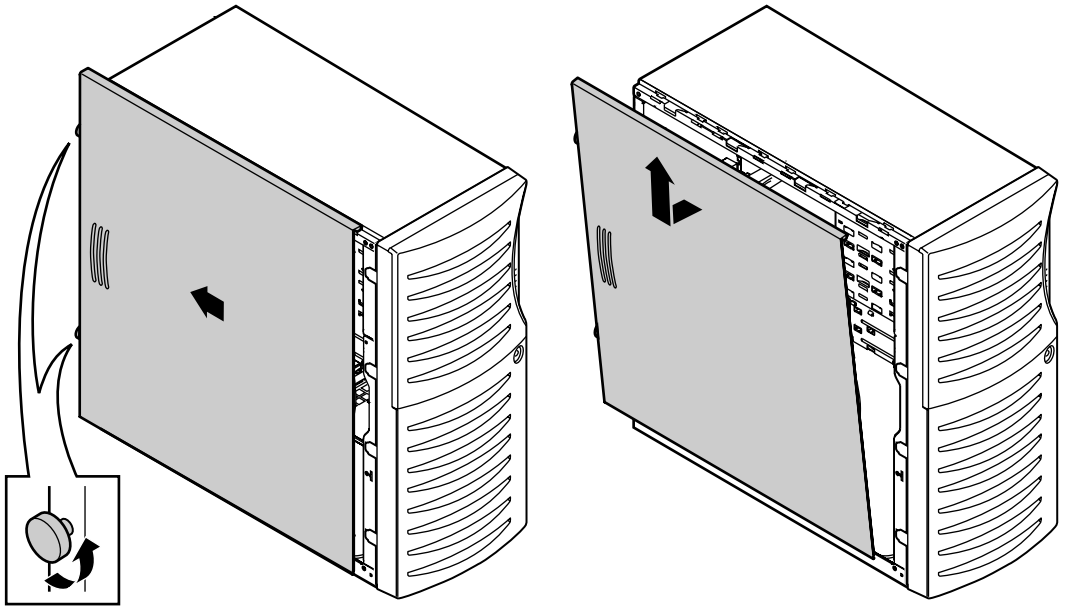


Avoid exposure to dangerous electrical voltages and moving parts by turning off your computer and unplugging the power cord and modem cable (if installed) before removing the chassis cover.

# Removing the side cover

## To remove the left side cover panel:

1. Turn off the computer and disconnect all power cords.
2. Loosen the thumbscrews (captive) on the back of the side panel and unlock the chassis lock (if applicable).
3. Slide the left side panel to the rear (approximately 3/4-inch), disengaging the retaining tabs on the top edge of the panel from the top of the chassis.

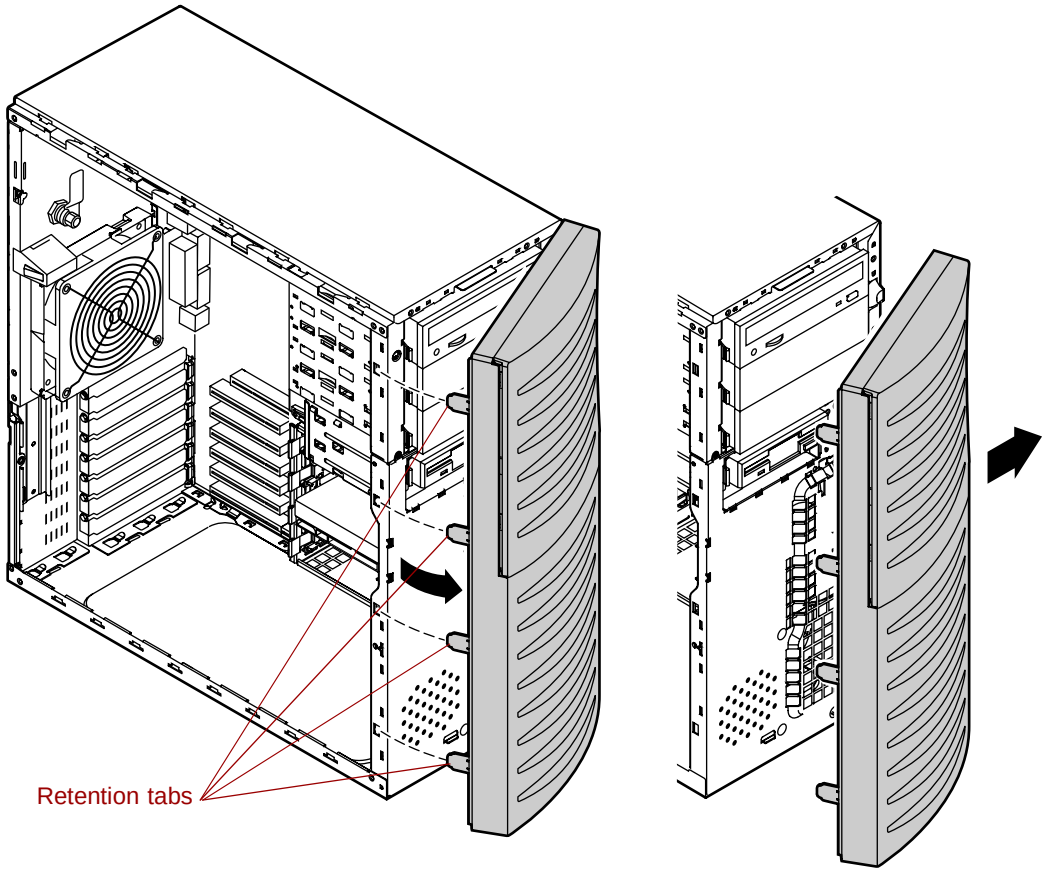


4. Tilt the panel out, then lift it up and away from the chassis.

# Removing the bezel

## To remove the bezel:

1. With the left side panel removed, disengage the retention tabs on the left side of the bezel by prying outward on each tab.
2. Swing the bezel out from the front of the chassis and disengage the hinge tabs on the right side of the bezel by moving the bezel to the right.
3. Remove the bezel.



# Closing the case

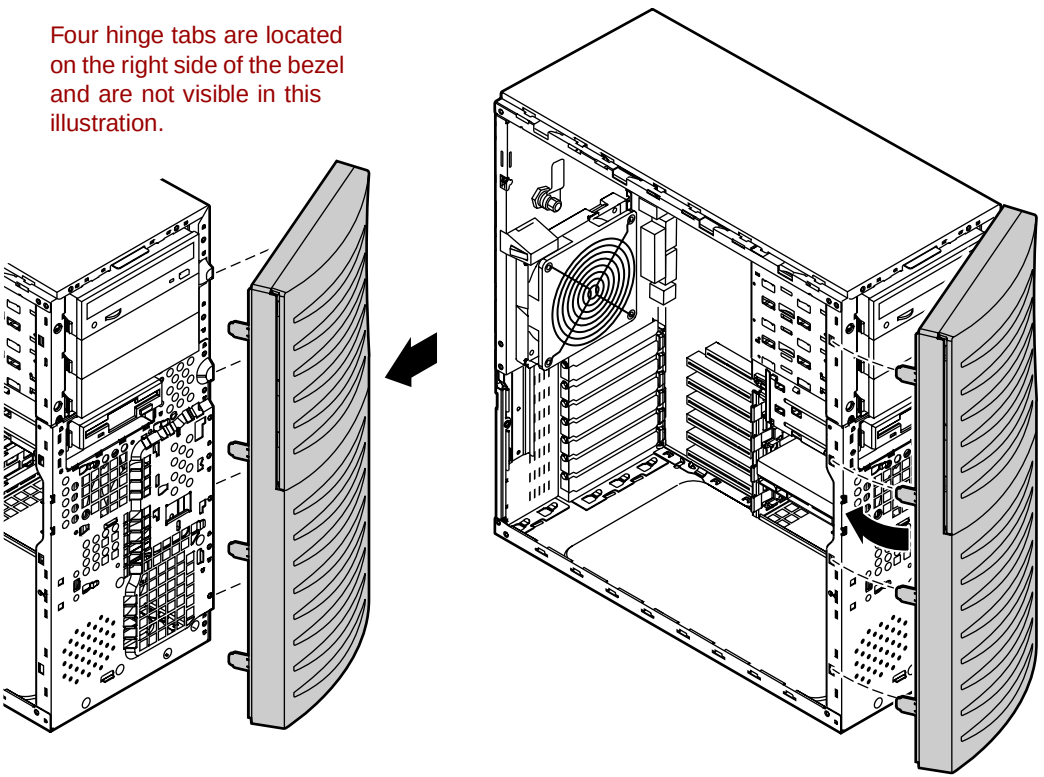
Replace the chassis cover as soon as you finish installing or removing components so that dust and dirt do not collect inside the computer.

## Replacing the bezel

### To replace the bezel:

1. Holding the bezel at an angle to the front of the chassis, place the hinge tabs on the right side of the bezel in the appropriate slots in the front of the chassis.
2. Swing the left side of the bezel toward the chassis until the retaining tabs snap into place.

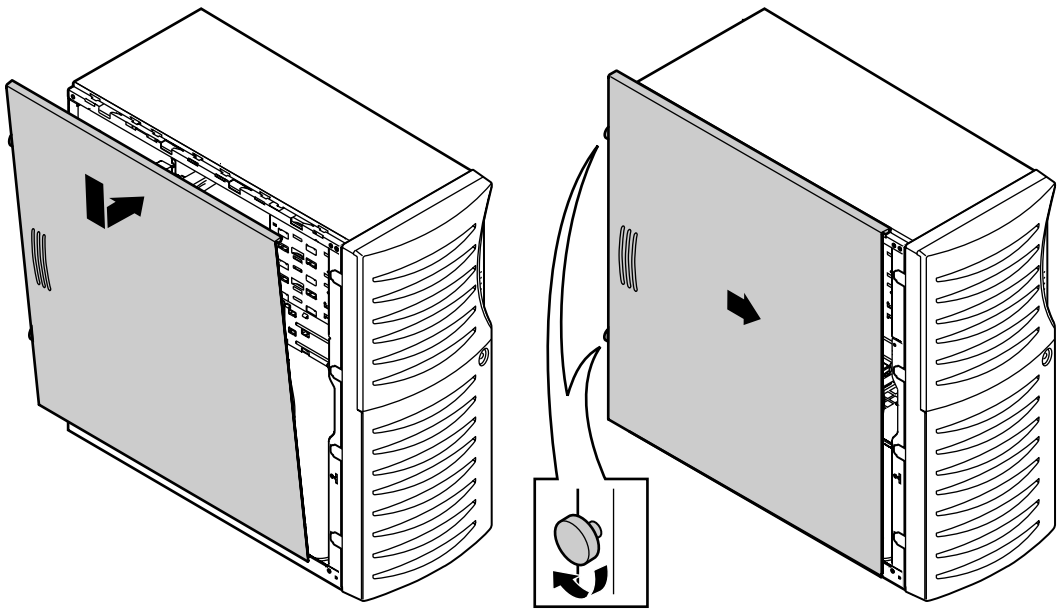
Four hinge tabs are located on the right side of the bezel and are not visible in this illustration.



# Replacing the side cover

## To replace the chassis cover:

1. Hold the left side panel at an angle to the chassis and 3/4-inch to the rear.
2. Engage the retaining strip on the bottom edge of the panel with the lip at the bottom edge of the chassis.
3. Swing the top of the panel toward the chassis, engaging the retaining tabs on the top edge of the side panel with the slots on the chassis.
4. Slide the panel toward the front of the chassis 3/4-inch, securing it in place.
5. Retighten the thumbscrews and lock the case, if necessary.



# Replacing and Adding System Components

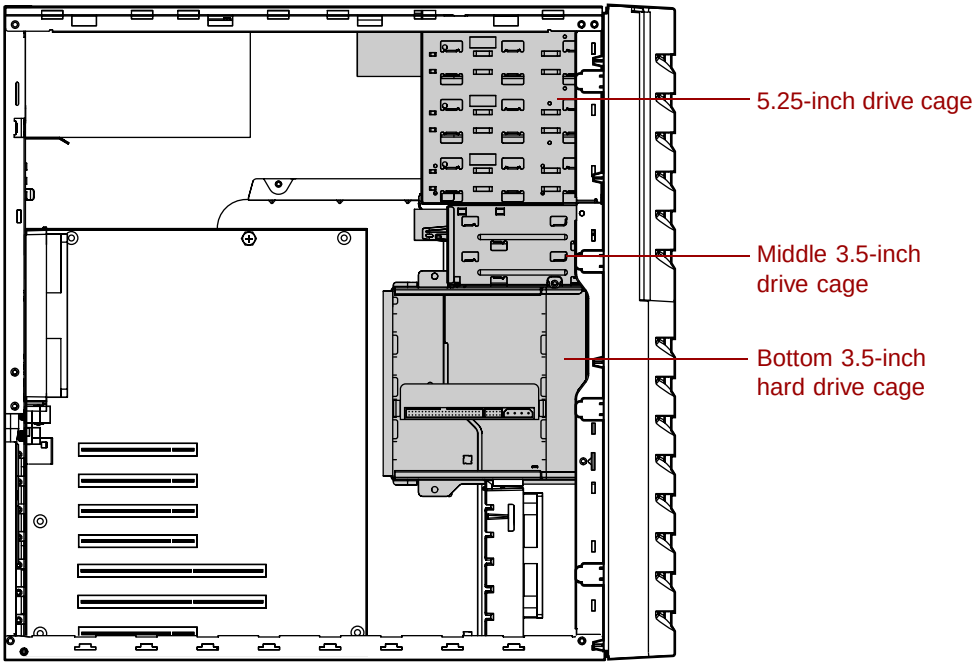
4

## Replacing or adding drives

### Preparing to replace or add a drive

One 3.5-inch diskette drive, one 3.5-inch hard drive, and one CD drive are included with your computer. You can add additional drives of the following types:

- Half-height 3.5-inch diskette drives - The floppy controller supports one diskette drive.
- Half-height 3.5-inch hard drives - The standard integrated Symbios 2-channel SCSI controller will support as many as 30 drives.
- Half-height 3.5-inch tape storage or disk storage devices.
- Half-height 5.25-inch devices.




As you prepare to install drives, keep the following in mind:

- To remove and install drives, you need an antistatic wrist strap.
- If you remove a drive, place it in an antistatic bag or container.
- Before you install a drive, see the drive documentation for information on configuring the drive, setting any jumpers on the drive, and attaching cables to the drive.
- If you are installing a drive that requires a controller card, install the card before you install the drive.
- IDE hard drives can be configured as single, master, or slave. IDE CD drives can be configured as master or slave. Configure the drives by using the drive-select jumpers located on the drives.
- If only one drive is attached to a controller cable, configure the drive as single if it is a hard drive or master if it is a CD drive. If two drives of any type are attached to the cable, configure one as master and one as slave.
- You may need to configure the drives you install using the BIOS Setup utility. Press F1 at start up to open the BIOS Setup utility.

# Drive cabling information

Your system includes three different types of drive cables. Each drive cable is clearly labeled, indicating cable-type and showing which end is connected to the appropriate connector on the system board and which end is connected to the drive.

Use the diskette drive connector cable to connect the diskette drive. Use the standard IDE connector cable to connect IDE devices such as CD drives and standard IDE hard drives. Use the SCSI LVD cable to connect LVD-compatible SCSI devices. A terminator comes installed on this cable.

You can also obtain two optional cables for your system. The IDE DMA-66 cable is used to connect DMA-66-compatible hard drives, and the SCSI SE cable is used to connect single-ended SCSI devices and requires termination, either on the device or as a plug-in terminator on the cable.

# 3.5-inch diskette or CD drives

Both the 3.5-inch diskette drive and 5.25-inch CD drives are secured in the chassis by removable rails. The rails let the drives slide into and out of the guides in the front bays. Extra rails are included with your system and are clipped to the outsides of the drive cages, inside the case.

## Replacing the 3.5-inch diskette or CD drive

### To replace the drives:

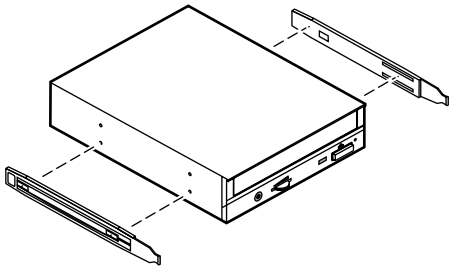
1. Turn off the system and disconnect the power cord, modem cord (if installed), and all external peripheral devices.
2. Remove the left side cover panel. (See “Removing the side cover” on page 18 and “Preventing static electricity discharge” on page 15.)
3. Remove the bezel. (See “To remove the bezel:” on page 19.)
4. Locate the 3.5-inch diskette or 5.25-inch CD drive you want to replace.
5. Remove the power and data cables from the back of the drive, noting their locations and orientations. (You will reconnect these cables after you install the new drive.)

6 Disengage the rail locking tabs by pressing inward on both front rail extensions, then move the drive slightly out of the bay by pushing on the back of the drive. Pull the drive out of the chassis.

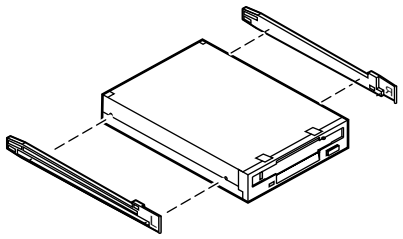
7 Remove the rails on both sides of the drive and snap them onto the new drive in the same positions. Make sure the front rail extensions are towards the front of the drive.

**Important**

The rails on the 3.5-inch drive are different from those on the CD drive. Make sure you install the correct rails on each drive.



CD drive



3.5-inch diskette drive

8 Set the drive jumpers to the appropriate settings (refer to your drive documentation for jumper settings).

9 Align the rails with the appropriate open bay, then slide the drive into the bay until the locking tabs snap into place.

10 Connect the power and data cables, making sure the cables are in their original positions.

11 Close the case by following the instructions on page 20.

12 Reconnect peripherals, the modem cord, and the power cord, then turn on the system.

## Adding a 3.5-inch device

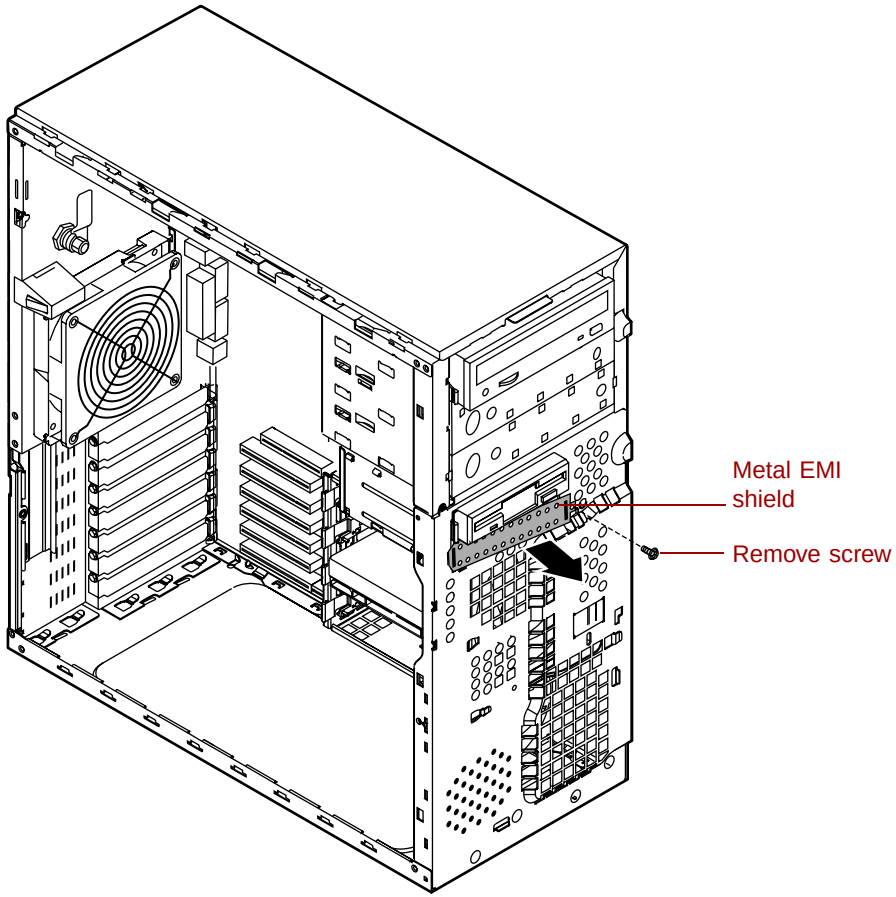
You can use the second, externally accessible, 3.5-inch drive bay to install a 3.5-inch device such as a tape drive or a 100 MB or 120 MB disk storage device. Extra sets of rails are included with your system (clipped to the drive cage) and are used for the installation.

You may have to purchase an additional cable with three connectors and of sufficient length to connect the existing devices and the new device to the connector on the system board.

### To install an additional device in the 3.5-inch drive bay:

1. Turn off the system and disconnect the power cord, modem cord (if installed), and all external peripheral devices.
2. Remove the left side cover panel. (See “Removing the side cover” on page 18 and “Preventing static electricity discharge” on page 15.)
3. Remove the bezel. (See “To remove the bezel” on page 19.)
4. Remove the plastic bezel insert covering the open bay by disengaging the retaining tab and pushing the insert out from the back of the bezel. Save the insert so that you can replace it if you remove the added device.

**5** Remove the metal EMI shield from the front of the drive bay, if installed, by unscrewing the retaining screw on the right side of the shield and swinging it out to disengage it from the chassis.



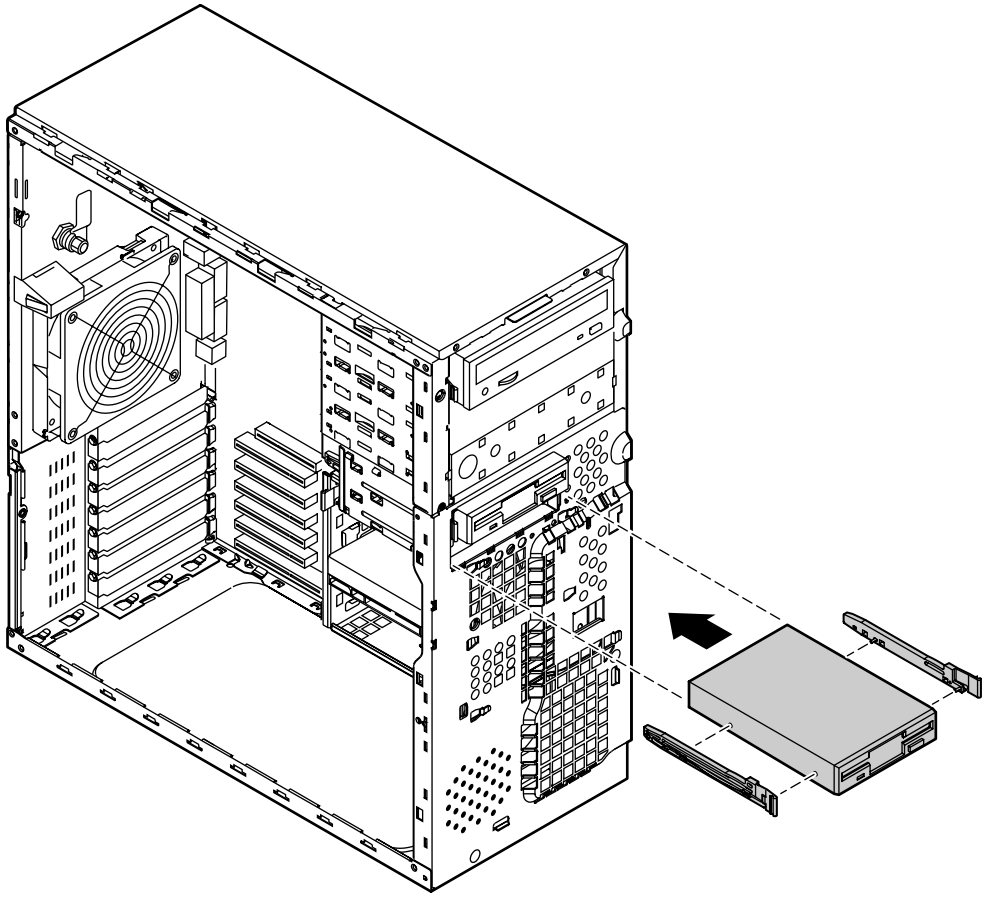

**Caution**

Your system was designed to adhere to electromagnetic interference requirements and the shield is an integral part of the system. Installing an approved device should continue to maintain those standards. If you remove the device you should reinstall the shield.

**6** Snap the rails onto the drive, making sure the front rail extensions are towards the front of the device.

7 Set the drive jumpers to the appropriate settings (refer to your drive documentation for jumper settings).

8 Align the rails with the open bay, then slide the drive into the chassis until the locking tabs snap into place.



9 Connect the power and data cables to the back of the drive.

10 Close the case by following the instructions on page 20.

11 Reconnect peripherals, the modem cord, and the power cord, then turn on the system.

12 Run the configuration software, if necessary.

## Adding a 5.25-inch device

You can install additional 5.25-inch devices such as a CD-RW drive or a tape backup in the two other, externally accessible, 5.25-inch drive bays. An extra set of rails is included with your system (clipped to the drive cage) and is used for the installation.

You may need to purchase an additional cable of sufficient length to connect the existing devices and the new device to the connector on the system board.

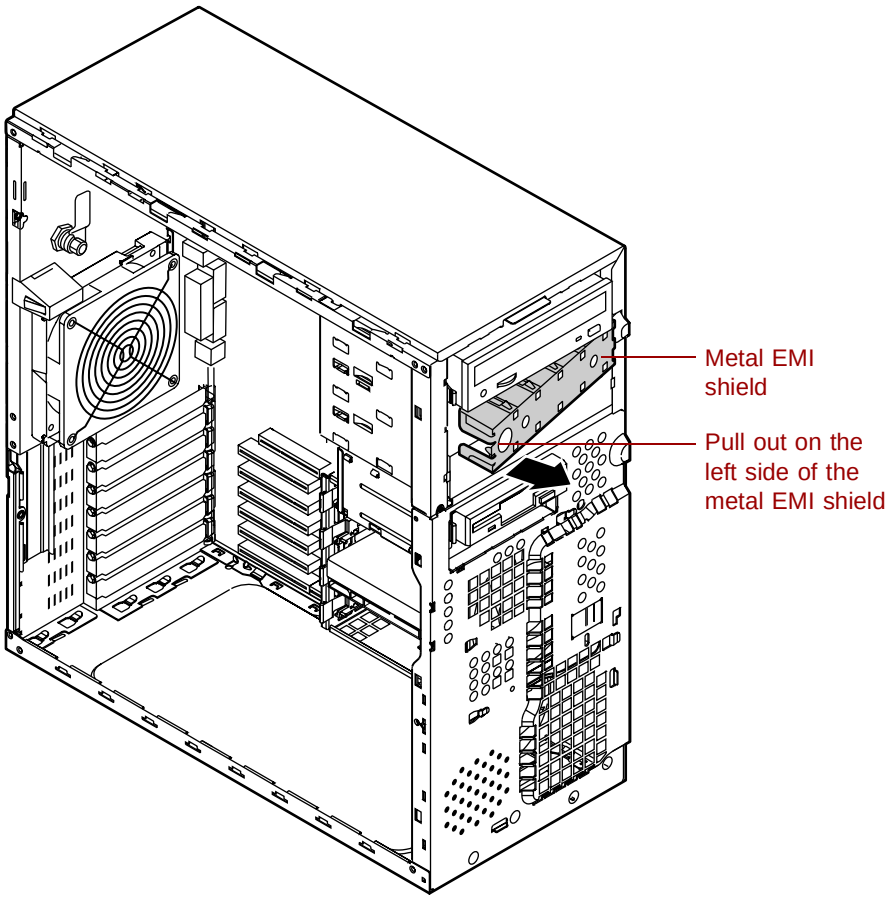
### To install an additional device in the 5.25-inch drive bay:

1. Turn off the system and disconnect the power cord, modem cord (if installed), and all external peripheral devices.
2. Remove the left side cover panel. (See "Removing the side cover" on page 18 and "Preventing static electricity discharge" on page 15.)
3. Remove the bezel. (See "To remove the bezel" on page 19.)
4. Remove the plastic bezel insert covering the open bay by disengaging the retaining tab and pushing the insert out from the back of the bezel.

**5** Remove the metal EMI shield from the front of the drive bay, if installed, by placing a finger in the hole on the left side of the shield and pulling out to disengage it from the chassis.

**Caution**

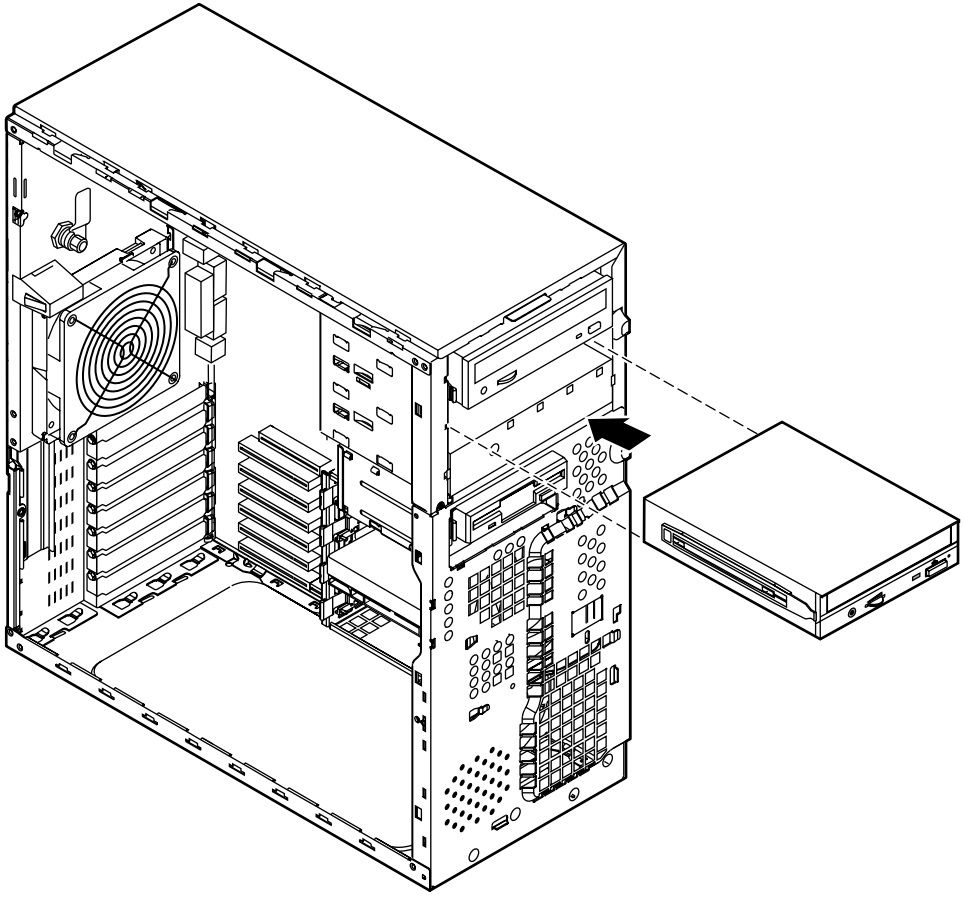
Your system was designed to adhere to electromagnetic interference requirements and the shield is an integral part of the system. Installing an approved device should continue to maintain those standards. If you remove the device you should reinstall the shield.




**6** Snap the rails onto the drive, making sure the front rail extensions are to the front of the device.

7 Set the drive jumpers to the appropriate settings (refer to your drive documentation for jumper settings).

8 Align the rails with the bay, then slide the drive into the chassis until the locking tabs snap into place.



9 Connect the power and data cables, making sure the cables match their original position.

10 Close the case by following the instructions on page 20.

11 Reconnect peripherals, the modem cord, and the power cord, then turn on the system.

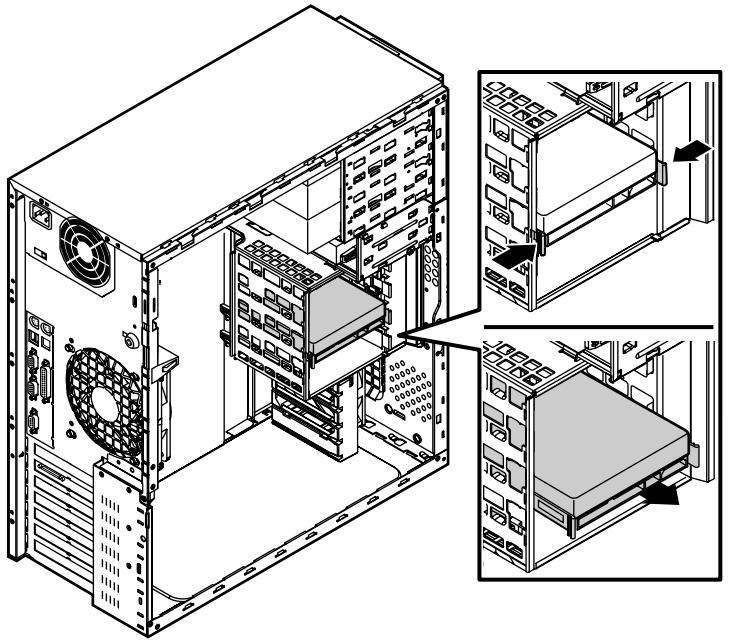
12 Run the configuration software, if necessary.

# Hard drive

## Replacing the hard drive

### To replace the hard drive:

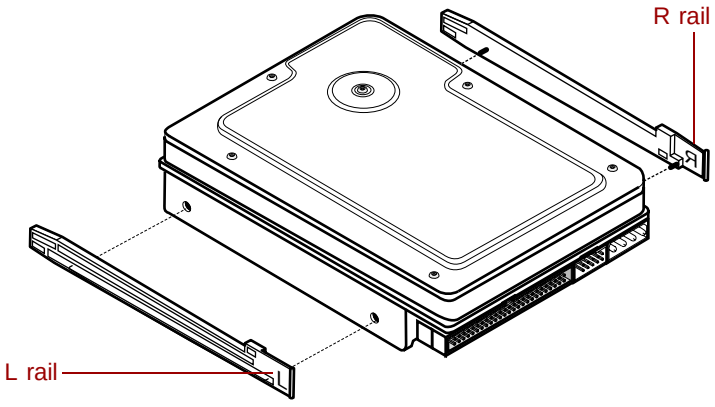
1. Turn off the system and disconnect the power cord, modem cord (if installed), and all external peripheral devices.
2. Remove the left side cover panel. (See “Removing the side cover” on page 18 and “Preventing static electricity discharge” on page 15.)
3. Locate the 3.5-inch hard drive in the bottom drive cage.
4. Remove the power and data cables from the back of the drive, noting their locations and orientations. (You will reconnect these cables after you install the new drive.)
5. Grip the plastic mounting rails firmly with thumb and index finger and pull the drive carefully straight out of the drive cage.



6. Remove the small plastic mounting rails from the hard drive.

7 Place the old drive in an antistatic bag or container, then place the new hard drive on a static-free surface with the top up and the connectors facing you.

8 Install two small, plastic drive mounting rails (L rail on the left and R rail on the right) to the new hard drive. Make sure the front rail extensions are towards the connector end of the device. Align the wire retention clips to the mounting holes in the drive and press the rails to the sides of the drive.




9 Set the drive jumpers to the appropriate settings (refer to your drive documentation for jumper settings).

10 Align the rails with an open bay in the bottom drive cage, and slide the drive into the cage until the locking tabs snap into place. Be sure that the data and power connectors on the drive face out.

11 Connect the power and data cables to the drive.

12 Close the case by following the instructions on page 20.

13 Reconnect peripherals, the modem cord, and the power cord, then turn on the system.

## Adding a hard drive

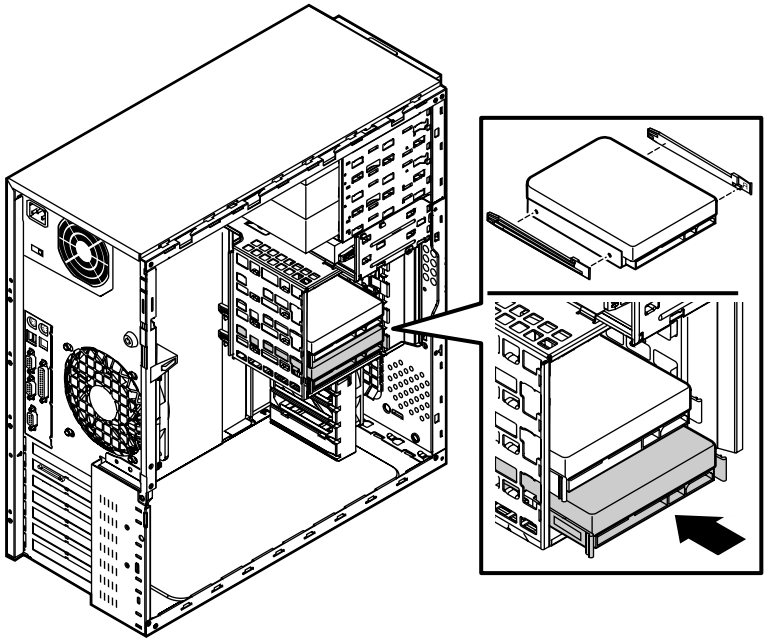
The system comes equipped with a drive cage that will accept additional hard drives. You may have to purchase an additional data cable with three connectors and of sufficient length to connect the existing hard drive and the new drive to the appropriate drive controller connector (IDE or SCSI) on the system board.

If you purchase an additional hard drive from Gateway, you will receive drive rails that you use to install the new drive in the drive cage. Additional drive rail kits are also available.

### To install an additional hard drive:

1. Turn off the system and disconnect the power cord, modem cord (if installed), and all external peripheral devices.
2. Remove the left side cover panel. (See "Removing the side cover" on page 18 and "Preventing static electricity discharge" on page 15.)
3. Place the new hard drive on a static-free surface with the top up and the connectors facing you.
4. Check the jumper settings on the drive. (See drive documentation for jumper settings.)
5. Install the two small, plastic drive mounting rails (L rail on the left and R rail on the right) to the new hard drive. Make sure the front rail extensions are towards the connector end of the device. Align the wire retention clips to the mounting holes in the drive and press the rails to the sides of the drive.

6 Align the rails with an open bay in the bottom drive cage, and slide the drive into the chassis until the locking tabs snap into place.



7 Connect the data and power cables to the drive. (See drive documentation for proper cable orientation.)

8 Close the case by following the instructions on page 20.

9 Reconnect peripherals, the modem cord, and the power cord, then turn on the system.

# Replacing or adding memory

The Synchronous Dynamic Random Access Memory (SDRAM) Dual Inline Memory Modules (DIMMs) supported by your system board conform to the following standards:

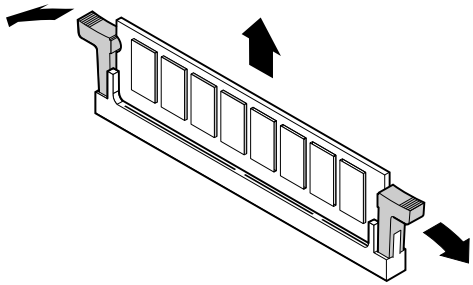
- 64 MB, 128 MB, 256 MB, and 512 MB DIMMs.
- PC133-compliant, registered, parity, ECC SDRAM.

Memory is installed in four banks (slots) on the system board. When you are selecting and installing DIMMs, keep the following in mind:

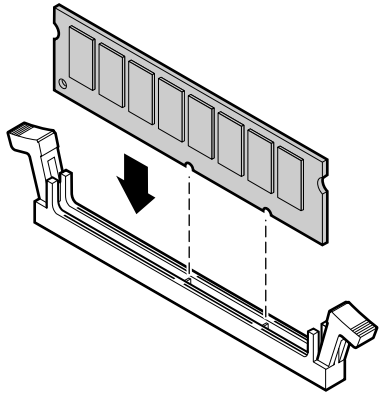
- Registered DIMMs should not be combined with unbuffered DIMMs.
- No jumper settings are required for the memory size or type because the BIOS automatically detects this information.
- 2 GB maximum system memory.

## To replace DIMMs:

1. Turn off the system and disconnect the power cord, modem cord (if installed), and all external peripheral devices.
2. Remove the left side cover panel. (See “Removing the side cover” on page 18 and “Preventing static electricity discharge” on page 15.)
3. Pull open the socket latches on each side of the DIMM socket, then lift the DIMM out of the socket. Store the DIMM in an antistatic container.



4 Insert the new DIMM into the socket and align the two notches in the DIMM with the two notches in the DIMM socket.



5 Gently press the DIMM into the socket until it is firmly seated. Inserting the DIMM automatically locks the socket latches on each end of the DIMM.

6 Close the case by following the instructions on page 20.

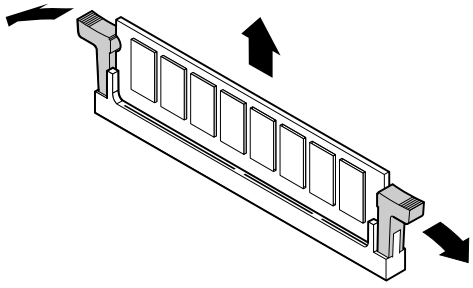
7 Reconnect peripherals, the modem cord, and the power cord, then turn on the system.

## To add or remove DIMMs:

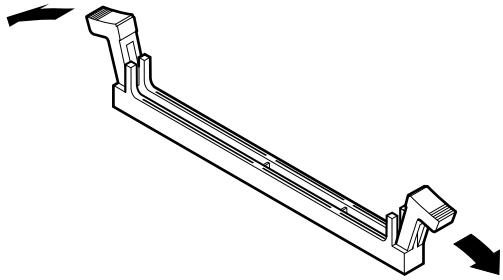
1 Turn off the system and disconnect the power cord, modem cord (if installed), and all external peripheral devices.

2 Remove the left side cover panel. (See “Removing the side cover” on page 18 and “Preventing static electricity discharge” on page 15.)

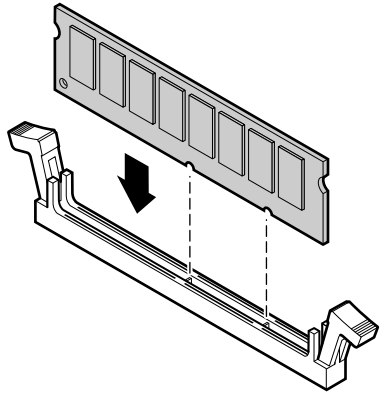
3 If you are removing a DIMM, pull open the socket latches on each side of the DIMM socket, then lift the DIMM out of the socket. Store the DIMM in an antistatic container.



4 If you are adding a DIMM, pull open the socket latches on each side of the DIMM socket.



5 Insert the new DIMM into the socket and align the two notches in the DIMM with the two notches in the DIMM socket.



6 Gently press the DIMM into the socket until it's firmly seated. Inserting the DIMM automatically locks the socket latches on each end of the DIMM.

7 Close the case by following the instructions on page 20.

8 Reconnect peripherals, the modem cord, and the power cord, then turn on the system.

# Replacing or adding a processor

The system is compatible with the Pentium® III (FC-PGA Socket 370) 667 MHz and faster processors with 133 MHz front-side bus (FSB). As many as two processors may be installed in the system (they must have the same processor and FSB speed). Processor and FSB speed are automatically detected by the system, therefore there are no system board jumpers to set.

When adding or replacing a processor, order a processor upgrade kit from Gateway. The kit includes the processor, a heatsink, and a disposable, antistatic wriststrap. The kit also contains a copy of the **muloader.exe** program, which must be run to update the microcode table and enable the second processor. Voltage Regulator Modules (VRMs) for both processors are built into the system board.

**Caution**



A heatsink must be installed on each processor. Installing a processor without a heatsink could result in damage to, or failure of, the processor.

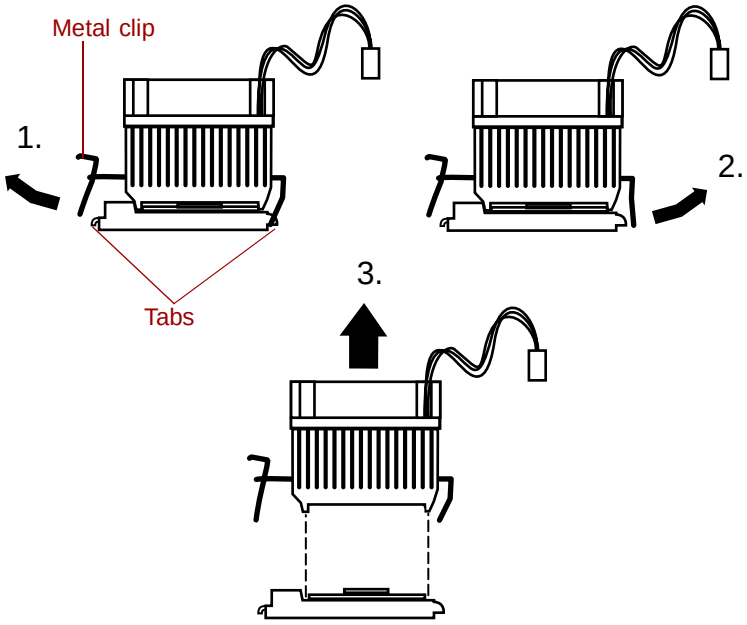
To replace the processor you must perform the following tasks:

- Remove the heatsink
- Remove the processor
- Install the new processor
- Replace the heatsink

## To remove the heatsink:

1. Turn off the system and disconnect the power cord, modem cord (if installed), and all external peripheral devices.
2. Remove the left side cover panel. (See “Removing the side cover” on page 18 and “Preventing static electricity discharge” on page 15.)
3. Disconnect the fan cable from the fan connector on the system board. (See “System board” on page 6 for the location of the fan connector.)

**4** Unhook the metal clip from the tab on the processor socket by pressing down on the clip and then pulling out on the clip.

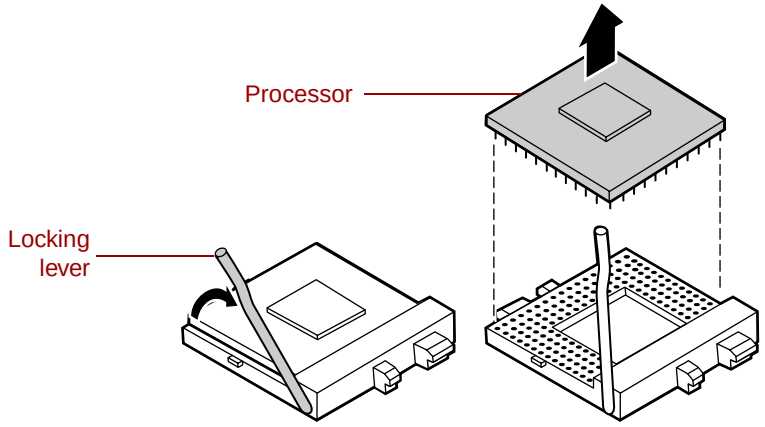



**5** Unhook the other end of the metal clip.

**6** Lift the heatsink straight up and off the processor.

## To remove the processor:

1. Open the locking lever on the processor socket by moving the lever slightly out to the side and then lifting it up 90 degrees.

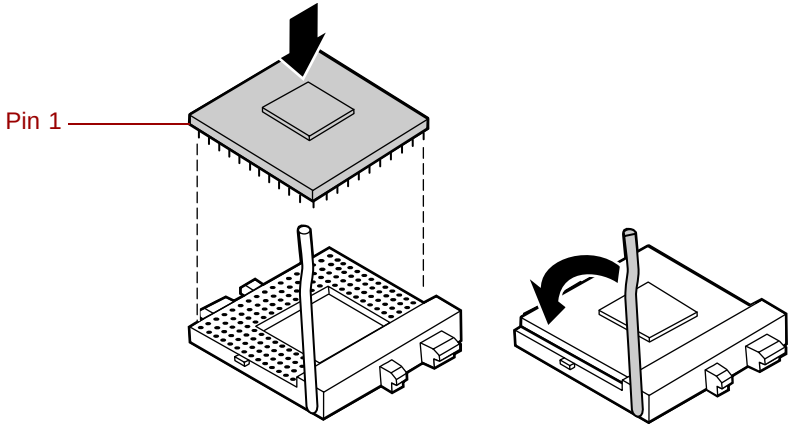



2. Lift the old processor straight up and out of the socket.

## To install the new processor:

1. Hold the new processor over the empty processor socket and verify that pin 1 on both the processor and the socket are aligned. Pin 1 is near the marked corner of the processor.

2. Gently place the new processor into the socket, then secure the processor by lowering the locking lever until the lever latches into place. The processor will slip into place without pressure when aligned correctly.

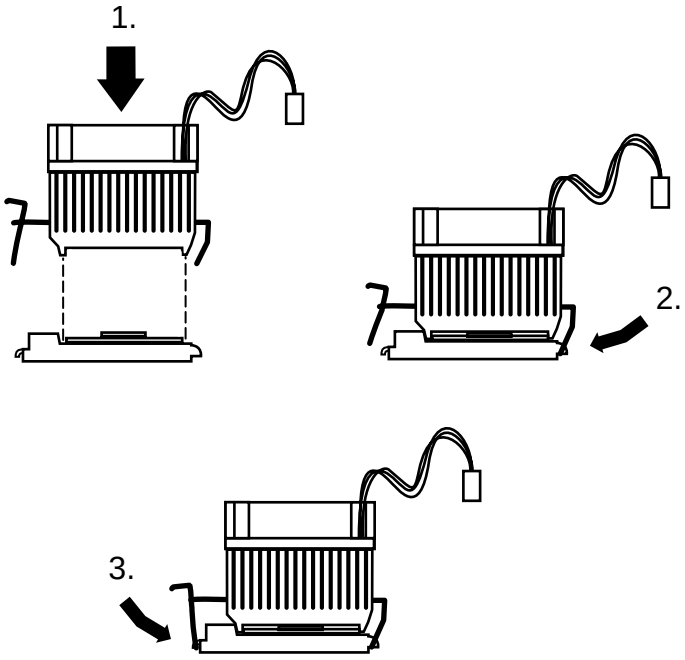


## To replace the heatsink:

1 Hook the metal clip on the heatsink to the tabs on the processor socket. Make sure the heatsink is level with the processor and the metal clips are securely attached.

**Caution**

It is very important that the heatsink makes direct contact with the processor or it will not cool correctly, resulting in processor failure.




2 Connect the heatsink fan cable to the fan connector on the system board.

3 Close the case. (See "Closing the case" on page 20 for instructions.)

4 Reconnect the cords you removed, then turn on the computer.

### To add an additional processor:

1. Turn off the system and disconnect the power cord, modem cord (if installed), and all external peripheral devices.
2. Remove the left side cover panel. (See "Removing the side cover" on page 18 and "Preventing static electricity discharge" on page 15.)
3. Hold the new processor over the empty processor socket and verify that pin 1 on both the processor and the socket are aligned. Pin 1 is near the marked corner.
4. Gently place the new processor into the socket.
5. Secure the processor by lowering the locking lever until the lever latches into place. The processor will slip into place without pressure when aligned correctly.
6. Install the heatsink. (See "To replace the heatsink:" on page 43.)
7. Connect the power supply cable of the processor fan to the second CPU fan connector on the system board (See "System board" on page 6 for location).
8. Close the case by following the instructions on page 20.
9. Reconnect the cords you removed, then turn on your computer.
10. Run the **muloader.exe** program that was included in the processor upgrade kit in order to update the microcode table and enable the second processor.

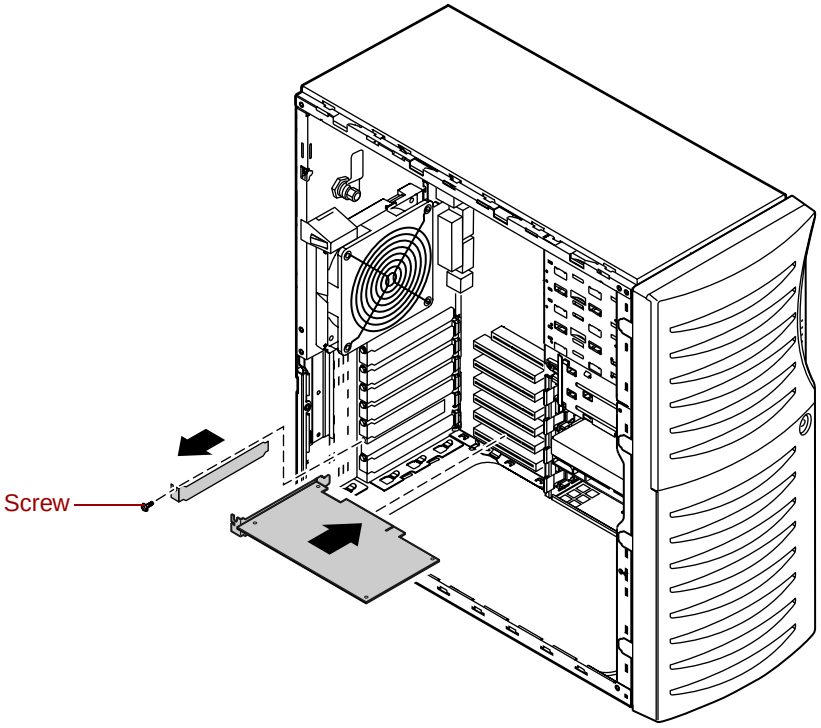
# Adding an expansion card

This server has seven PCI expansion slots on the system board that may be used for a variety of expansion cards. These cards may include a SCSI controller card, a modem, a high-end sound card, or an additional IDE controller card.

## To add an expansion card:

1. Set any jumpers and switches on the card, if required. (See the card instructions.)
2. Turn off the computer, disconnect the power cord, modem cord (if installed), and all external peripheral devices.
3. Remove the left side cover panel. (See “Removing the side cover” on page 18 and “Preventing static electricity discharge” on page 15.)
4. Locate an available slot appropriate to the type of card you are installing, and remove the slot cover by removing the screw that secures it to the back of the chassis.

5 Insert the bottom edge of the expansion card (the keyed edge with the contacts) into the slot on the system board and push in firmly to seat the card.




6 After seating the card firmly, use the screw you removed to secure the card to the rear of the chassis.

7 Connect cables to the card, if required.

8 Close the case by following the instructions on page 20.

9 Reconnect peripherals, the modem cord, and the power cord, then turn on the system.

You may need to reconfigure your system after installing some expansion cards. You may also need to install software that came with the card. Check the card documentation for additional information.

# Replacing the battery

The battery provides power for the system real-time clock and CMOS memory, which holds the system configuration information.

If your battery is failing you may notice your system clock slowing down and giving you the incorrect time. If so, open the BIOS Setup utility and write down all the values in the various menus before replacing the battery. Replacing the battery resets the BIOS Setup utility to its default values.

**Warning**



There is a danger of explosion if the battery is incorrectly replaced. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

**Warnung**



Explosionsgefahr bel falsch eingebautter batterie.

Ersetzen der batterien nur mit batterien des gleichen typs oder mit batterien vom hersteller empfohlenen typs.

Entsorgen gebrauchter batterien entsprechned herstellerangaben.

**Attention**



Il y a danger d'explosion s'il y a replacement incorrect de la batterie.

Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur.

Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

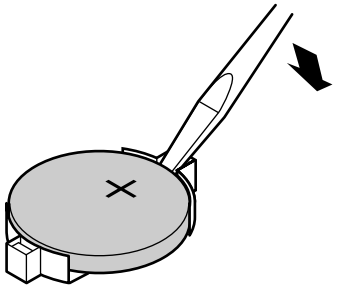
## To replace the battery:

1. Restart the computer and start the BIOS Setup utility by pressing F1 when you are prompted to do so.
2. Write down the CMOS values from the **Main, Advanced, Security, Server** and **Boot** menus so you can reenter them after you replace the battery. For more information about the BIOS Setup utility program, see "Using the BIOS Setup Utility" on page 67.
3. Turn off the computer, disconnect the power cord, modem cord (if installed), and all external peripheral devices.

4 Remove the left side cover panel. (See “Removing the side cover” on page 18 and “Preventing static electricity discharge” on page 15.)

5 Locate the battery on the system board (see “System board” on page 6). The battery is circular and has the positive pole mark (+) on the top.

6 Using a small, flat-bladed screwdriver, carefully remove the battery from its socket on the system board.



7 Press the new battery in the socket with the positive pole up. Be sure you have pressed the battery down far enough for it to contact the base of the socket (it should snap into place).

8 Close the case by following the instructions on page 20.

9 Reconnect peripherals, the modem cord, and the power cord, then turn on the system.

10 If the CMOS data is not correct, change the information in the BIOS Setup utility using the data you recorded in Step 2.

# Troubleshooting the battery installation

If you have problems after installing the new battery, try each of the items listed below:

- Turn off the computer and make sure that all exterior cables are attached and secured to the correct connectors.
- Make sure that all power switches are on. If the computer is plugged into a power strip or surge protector, make sure it is turned on also.
- Enter the BIOS Setup utility and compare the settings on the screen with your notes or the system hardware manuals. Correct any discrepancies.

- Turn off the computer, remove the cover, and make sure that all cables inside the case are attached securely. Also, make sure that the colored cable edges are aligned correctly and that the connectors do not miss any pins. Disconnect and reconnect the cables. Close the case as described on page 20, reconnect the modem and power cords, then turn on the computer.
- Turn off the computer, remove the cover and, if you have the proper test equipment, make sure that the new battery has power. (Although unlikely, your new battery may be defective.) Close the case as described on page 20, reconnect the modem and power cords, then turn on the computer.

# Replacing the system board

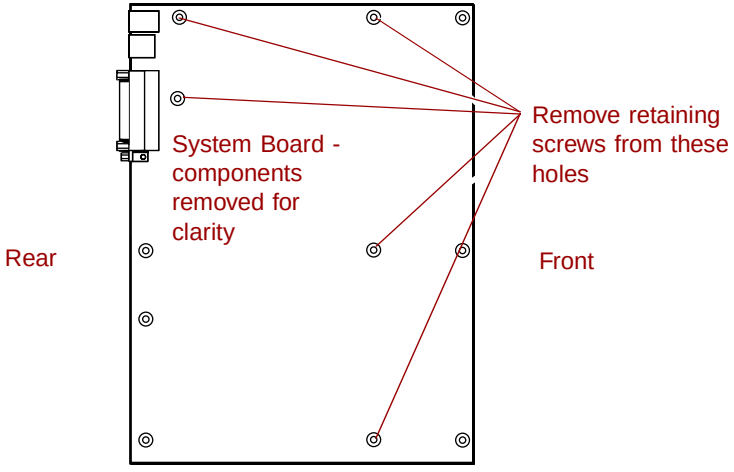
The system board is mounted on stand-off retention hooks on the right side of the chassis. The board is secured by six screws, one on the back-right of the chassis (outside), and five inside the chassis.

**Important**

All references to front, rear, left, or right on the computer are based on the computer being in a normal, upright position, as viewed from the front.

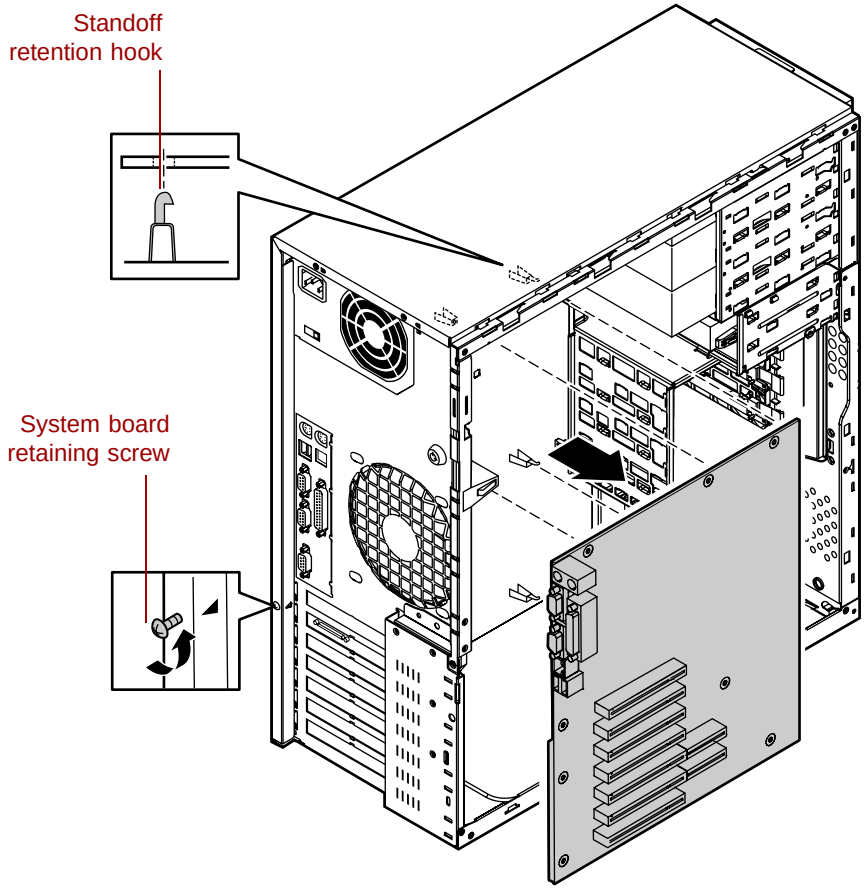
## To remove the system board:

1. Turn off the system and disconnect the power cord, modem cord (if installed), and all external peripheral devices.
2. Remove the left side cover panel. (See “Removing the side cover” on page 18 and “Preventing static electricity discharge” on page 15.)
3. Place the chassis gently on its right side.
4. Remove all expansion cards from the system board. (See “Adding an expansion card” on page 45.)
5. Disconnect all cables from the system board, including the power cables from the power supply. Note where the cables are connected.
6. Remove the retaining screws securing the board to the right side of the chassis (inside the chassis).



7 Loosen the retaining screw at the right rear of the chassis.

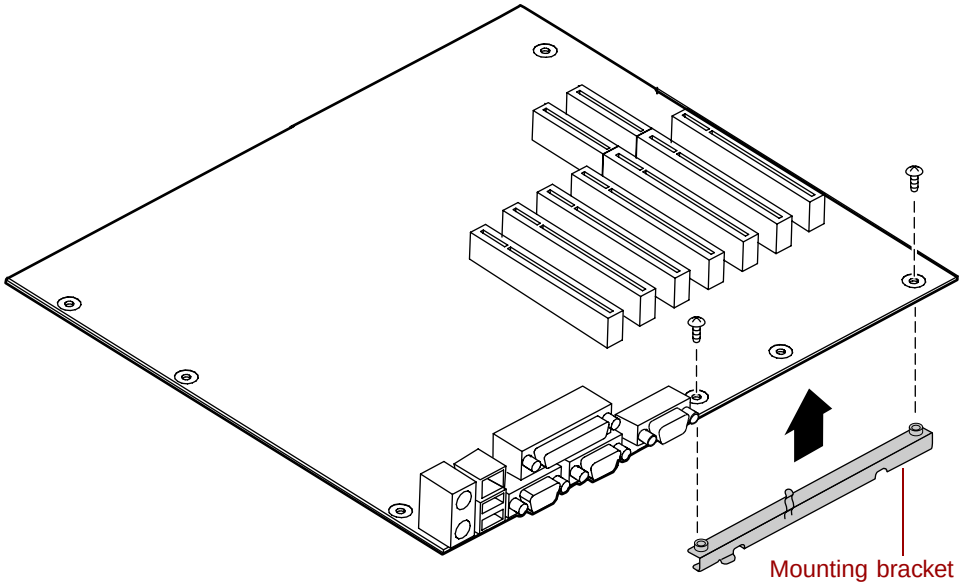
8 Slide the system board toward the front of the chassis slightly, to disengage it from the stand-off retention hooks, then remove it carefully.



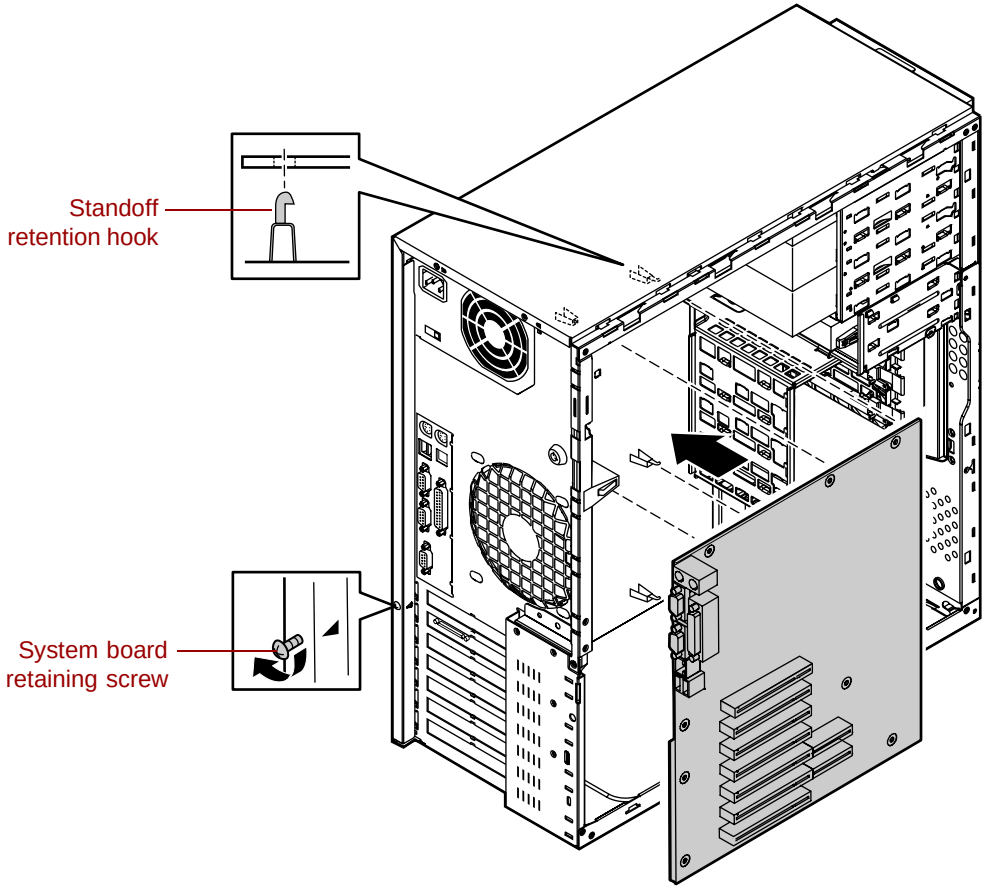

9 Remove the system board mounting bracket by removing the two screws securing it to the system board (refer to the illustrations on page 52) and place the board in an antistatic bag or container.

## To install the system board:

1 Install the system board mounting bracket on the rear edge of the system board by fastening the mounting bracket to the system board with two screws.



2 Holding the system board by the top and bottom edges, place it in the case by aligning the mounting holes on the board with the standoffs (threaded) and standoff retention hooks on the right side of the case. Carefully align the I/O panel on the rear of the board with the I/O plate on the case.




3 Holding the system board in place, tighten the retaining screw on the right rear of the case.

4 Replace the retention screws previously removed from the system board, then tighten the screws.

5 Reinstall the expansion cards.

6 Close the case by following the instructions on page 20.

7 Reconnect peripherals, the modem cord, and the power cord, then turn on the system.

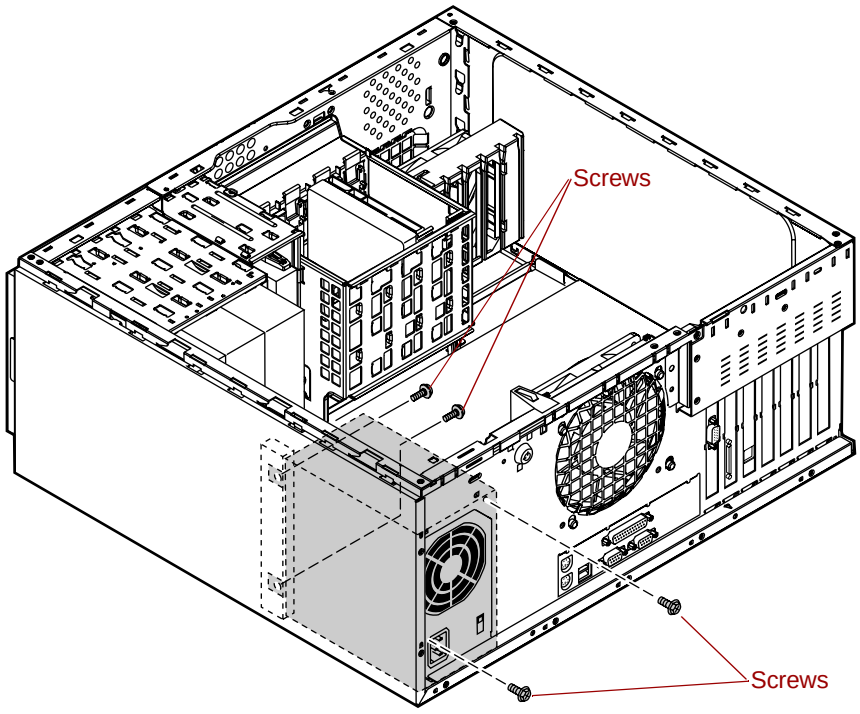
# Replacing the power supply

## To remove the power supply:

1. Turn off the system and disconnect the power cord, modem cord (if installed), and all external peripheral devices.
2. Remove the left side cover panel. (See “Removing the side cover” on page 18 and “Preventing static electricity discharge” on page 15.)
3. Lay the case on its right side, if possible.
4. Disconnect the power supply connectors from all internal devices including the 3.5-inch diskette drive, the CD drive, and all hard drives.
5. Disconnect the main power supply connector to the system board by pressing on the tab to release the connector, then gently pulling the connector from the board.
6. Remove the cable supports securing the power supply cables to the chassis.

7 Remove the two supporting screws securing the power supply to the top of the chassis.

8 While supporting the power supply with one hand, remove the two screws securing the power supply to the rear of the chassis, then carefully lift the power supply out of the chassis.




## To install the new power supply:

1 Before installing the new power supply, verify that it matches the one you previously removed. The mounting holes should line up correctly, and the specifications and power output connectors should be the same.

2 Make sure that the red voltage switch on the back of the new power supply is set to the proper voltage for your area.

3 Place the new power supply in position in the chassis and line up the mounting holes with the holes in the chassis. Note that alignment pins in the chassis go into mounting holes in the rear of the power supply.

4 Replace the two screws securing the power supply to the back of the chassis, leaving them slightly loose.

5 Replace the two supporting screws securing the power supply to the top of the chassis, then tighten all screws.

6 Reconnect the power connectors to the system board and to all internal devices.

7 Place the case upright, then close the case by following the instructions on page 20.

8 Reconnect peripherals, the modem cord, and the power cord, then turn on the system.

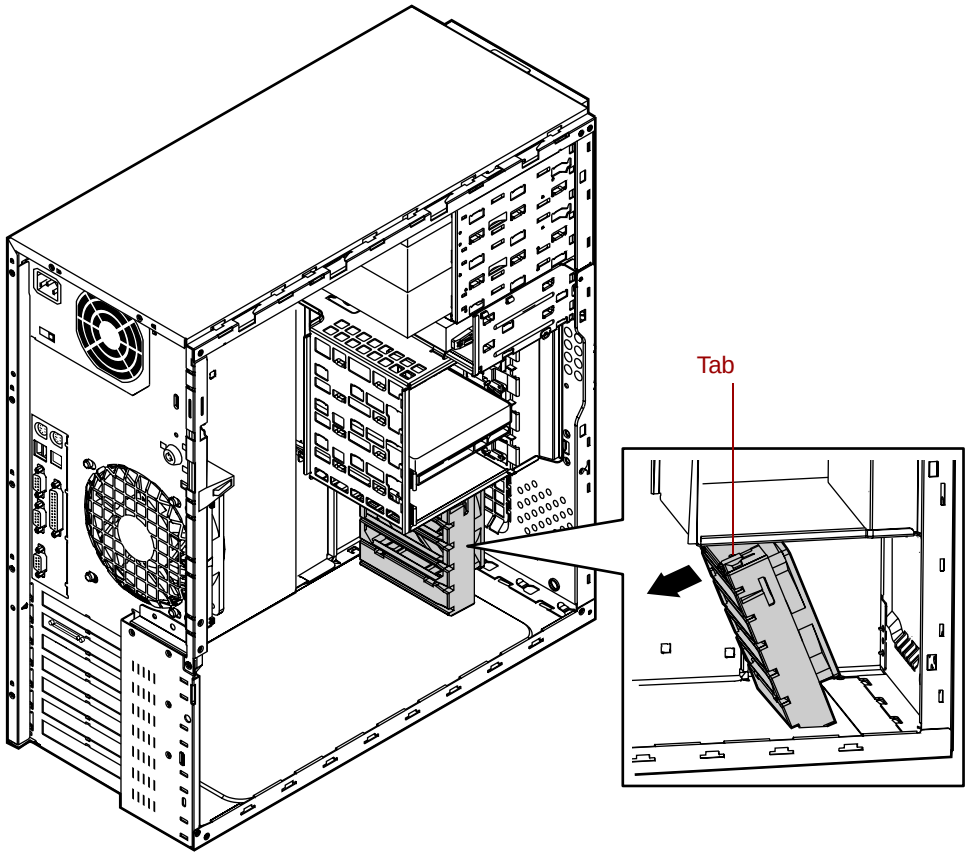
# Replacing the system fans

The front system fan is mounted on the front of the bottom drive cage. The rear system fan is mounted on a fan mounting bracket attached to the rear of the system.

### To remove the front system fan:

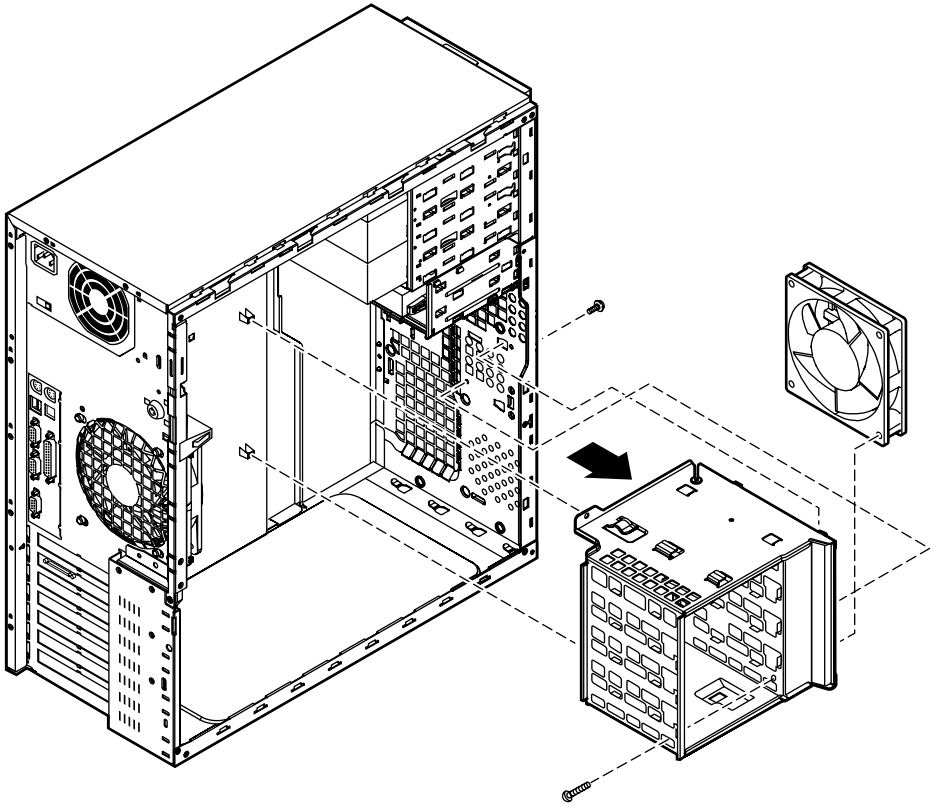
1. Turn off the system and disconnect the power cord, modem cord (if installed), and all external peripheral devices.
2. Remove the left side cover panel. (See “Removing the side cover” on page 18 and “Preventing static electricity discharge” on page 15.)
3. Remove the bezel, as described in “To remove the bezel” on page 19.
4. Disconnect the front fan power cable from the system board.
5. Remove the power and data cables from any hard drives mounted in the bottom drive cage.
6. Remove the drives from the bottom drive cage and place them in anti-static bags or containers.

**7** Remove the plastic card guide attached to the bottom drive cage by depressing the locking tabs (from the rear of the guide) and pivoting the top of the guide toward the back of the system. (You may have to remove one or more expansion cards from the system board.)



8 Remove the two screws securing the bottom drive cage to the front of the chassis and the two screws securing it to the right side of the chassis.

9 Slide the bottom drive cage toward the left side of the chassis, then toward the back, disengaging it from the middle drive cage and the chassis.



10 Carefully remove the bottom drive cage from the chassis.

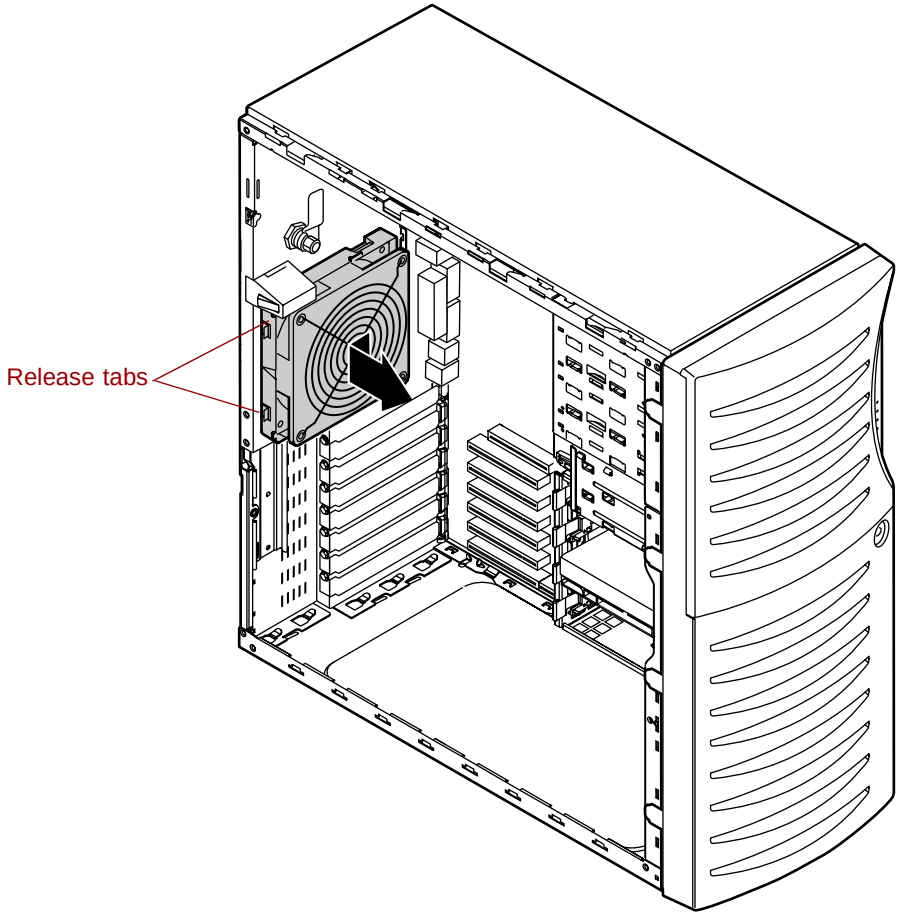
11 Remove the four screws securing the front system fan to the bottom drive cage, then lift the fan from the cage. Note the routing of the fan power cable.

### To install the new front system fan:

1. Place the new front system fan into the recess in the front of the bottom drive cage. Orient the fan with the label toward the inside of the chassis (toward the system board) and the fan power cable to the right of the drive cage.
2. Secure the fan to the drive cage with the four screws previously removed.
3. Place the bottom drive cage into the chassis under the middle drive cage and slide it forward so that the support tabs on top of the bottom cage engage the middle drive cage. Slide the bottom drive cage right to align the screw holes with the holes on the front of the chassis.
4. Secure the drive cage with the four screws previously removed. Make sure to correctly route the fan power cable.
5. Replace the plastic card guide and any expansion cards removed previously.
6. Replace the hard drives into the bottom drive cage.
7. Reconnect the data and power cables on the hard drives.
8. Plug the fan power cable into the appropriate connector on the system board.
9. Replace the bezel, then close the case by following the instructions on page 20.
10. Reconnect peripherals, the modem cord, and the power cord, then turn on the system.

## To remove the rear system fan assembly:

1. Turn off the system and disconnect the power cord, modem cord (if installed), and all external peripheral devices.
2. Remove the left side cover panel. (See “Removing the side cover” on page 18 and “Preventing static electricity discharge” on page 15.)
3. Disconnect the rear fan power cable from the system board.
4. Move the two plastic release tabs on the left side of the fan bracket (inside the chassis) toward the front of the chassis, then move the fan bracket to the left and remove.
5. Carefully remove the fan and bracket from the chassis.



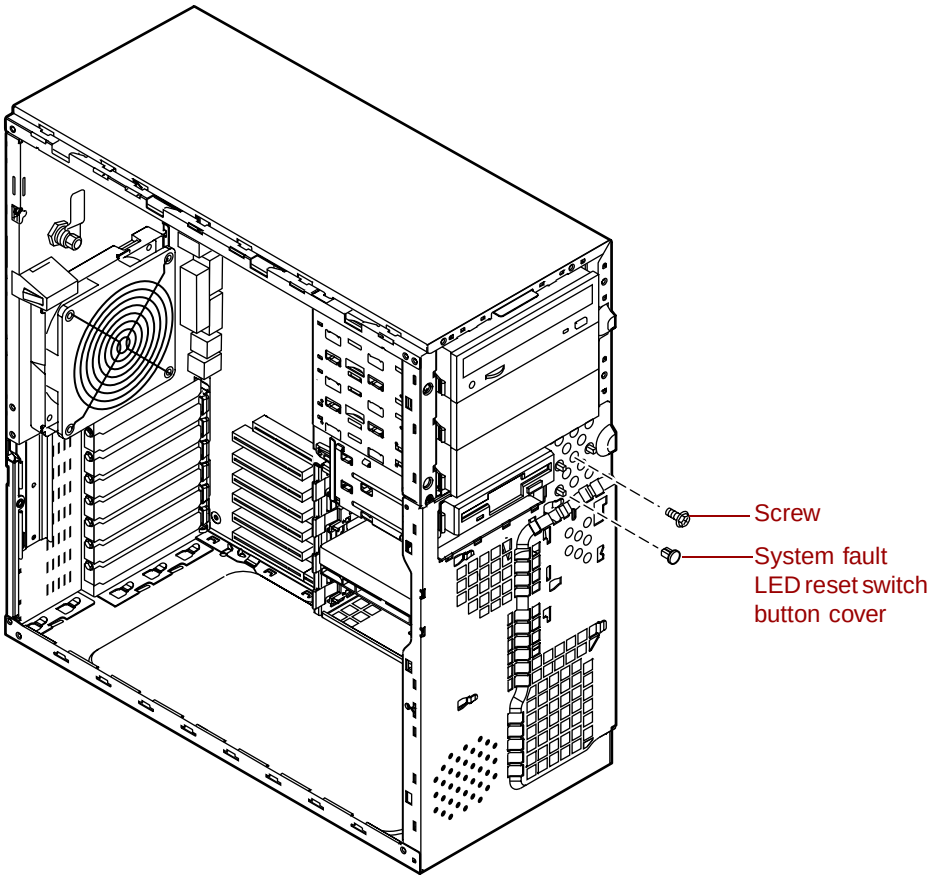
### To install the new rear system fan assembly:

1. Place the fan bracket unit into the chassis by engaging the four retaining tabs with the holes in the back of the chassis and sliding the unit to the right until the two locking pins click into place.
2. Plug the fan power cable into the appropriate connector on the system board.
3. Close the case by following the instructions on page 20.
4. Reconnect peripherals, the modem cord, and the power cord, then turn on the system.

# Replacing the control/LED board

## To remove the control/LED board:

1. Turn off the system and disconnect the power cord, modem cord (if installed), and all external peripheral devices.
2. Remove the left side cover panel. (See “Removing the side cover” on page 18 and “Preventing static electricity discharge” on page 15.)
3. Remove the bezel, as described in “To remove the bezel” on page 19.
4. Remove the system fault LED reset switch button cover.



5 After noting the position of the cable, disconnect the front panel cable from the front panel connector on the system board (see "System board" on page 6).

6 Remove the single screw securing the control/LED board to the chassis, then disengage the alignment tabs from the chassis.

7 Remove the bottom drive cage. (See "To remove the front system fan:" on page 58.)

8 Remove the control/LED board from the chassis.

### To install the new control/LED board:

1 Plug the front panel cable into the front panel connector on the system board (see "System board" on page 6).

2 Insert the alignment tabs of the control/LED board into the slots on the front of the chassis, then replace the retaining screw.

3 Replace the system fault LED reset switch button cover.

4 Replace the bezel, then close the case by following the instructions on page 20.

5 Reconnect peripherals, the modem cord, and the power cord, then turn on the system.

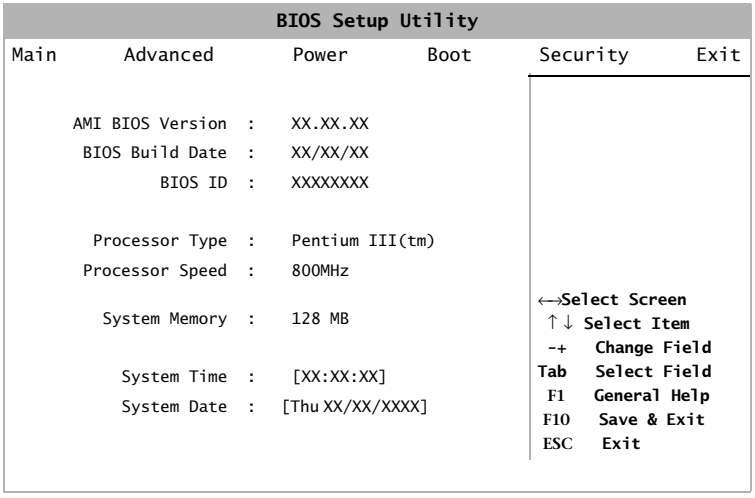
# Using the BIOS Setup Utility

# 5

## About the BIOS Setup utility

The computer's BIOS has a built-in setup utility that lets you configure several basic system characteristics. The settings are stored in battery-backed RAM and are retained even when the power is off.

Open the BIOS Setup utility by restarting the computer, then pressing F1 when the Gateway logo screen appears during startup. The Main BIOS Setup utility screen opens. It may not look exactly like the screen shown below.



As you select items on the Main menu or in submenus, you see specific information related to the current selection in the Item Specific Help box.

The command bar shows the keystrokes necessary to access help, navigate through the menus, and perform other functions.

- F1 opens the Help screen, providing general help for using the BIOS Setup utility.
- The ↑ (up arrow) and ↓(down arrow) keys select items in the menu.
- The ←(left arrow) and →(right arrow) keys move you between the menus.
- ENTER either moves you to a submenu screen when a selected item is preceded by > or activates a selected field.
- ESC closes the screen you are in and returns you to the previous screen or opens a dialog box allowing you to exit from the BIOS Setup utility.
- F10 opens a screen that lets you save all settings, then exit the BIOS Setup utility.

The main screen has the following menu selections at the top of the screen:

- **Main** gives you access to basic information and settings related to your system hardware and configuration.
- **Advanced** gives you access to information and settings for system resources, hardware, and system configuration.
- **Power** gives you access to information and settings for power management features.
- **Boot** gives you access to information and settings for boot features and boot sequences.
- **Security** gives you access to settings related to system access passwords and security settings (See “System security” on page 79).
- **Exit** gives you access to options for exiting the BIOS Setup utility.

Refer to the Help box on the right side of the BIOS Setup screens for information about menu items.

# Updating the BIOS

If you need a new version of the BIOS, you can download the BIOS update from technical support area on the Gateway Web site (www.gatewayatwork.com) and install the new version from a diskette.

To update the BIOS you need to perform the following tasks in sequence:

- Create a bootable diskette
- Note the current BIOS settings
- Create the BIOS update diskette
- Update the BIOS
- Restore the BIOS settings

Follow the detailed instructions for updating the BIOS that are included in the self-extracting file that you can download from the technical support area of Gateway's Web site.

**Important**



Whenever the BIOS is updated, the microcode table is returned to the default setting. To update the table to the proper settings for your processor, you must run the MULOADER.EXE program, which is available from the same site where you obtained the BIOS update files.

# Setting the configuration switches

The system board has a configuration switch block related to the BIOS. You can use specific switches to reset the CMOS settings to the BIOS defaults, or to erase a misplaced or forgotten password. For the location of the configuration switch block, see “System board” on page 6.

**Caution**



Moving any of these switches while the power is on can damage your computer. Always turn off the computer and unplug the power cord from the computer before changing switch settings.

## The Clear Password switch

The Clear Password switch on the system board (SW3) lets you clear the existing system passwords in case they are misplaced or forgotten, or if the system administrator is unavailable. For normal operation, SW3 should be set to the OFF position. To clear the passwords, SW3 should be set to the ON position. Make sure you turn off the computer and unplug the power cord before moving the switch.

Once the switch is set to the ON position, passwords will be disabled, allowing you to go directly to the operating system or to enter the BIOS Setup without entering a password. To set up a new password, enter the BIOS Setup and enter the password as you normally would, then turn off the system. Prior to turning on the system again, open the case, return SW3 back to the OFF position, then close the case.

## The Clear CMOS switch

The Clear CMOS switch on the system board (SW4) lets you clear all BIOS Setup settings. For normal operation, SW4 should be in the OFF position. To clear the CMOS settings (and to clear passwords as well), SW4 should be turned to the ON position. Make sure you turn off the computer and unplug the power cord before moving the switch.

Once the switch is set to the ON position, the system passwords will be cleared when the system goes through the POST routine. When this occurs, the following error message will appear:

CMOS checksum bad

Press F1 to run Setup
Press F2 to load default values and continue

After selecting the appropriate option, enter any required information and continue. When you turn off the system again, open the case, set the switch back to the OFF position, then close the case.

# Managing Your System

6

## Protecting against power source problems

Surge suppressors, line conditioners, and uninterruptible power supplies can help protect your system against power source problems.

### Surge suppressors

During a power surge, the voltage level of electricity coming into your system can increase far above normal levels and cause data loss or system damage.

Protect your computer and peripherals by connecting them to a surge suppressor, which will absorb voltage surges and prevent them from reaching your computer.

When purchasing a surge suppressor:

- Make sure the surge suppressor meets the appropriate product safety certification for your location, such as Underwriters Laboratories (UL).
- Check the maximum amount of voltage the suppressor allows to pass through the line. The lower the voltage that the suppressor allows to pass through, the better the protection for your system.

- Check the energy absorption (*dissipation)* rating. The higher the energy absorption rating, the better the protection for your system.
- Check for line-conditioner capabilities. A line conditioner smooths out some of the normal line noise (small voltage fluctuations) of an electrical supply.

# Line conditioners

A line conditioner protects your system from the small fluctuations in voltage from an electrical supply. Most systems can handle this variation, called *line noise,* without problems. However, some electrical sources include more line noise than normal. Line noise can also be a problem if your system is located near, or shares a circuit with, a device that causes electromagnetic interference, such as a television or a motor.

Some surge suppressors and uninterruptible power supplies include simple line-conditioning capabilities.

# Uninterruptible power supplies

Use a standby uninterruptible power supply (UPS) to protect your computer from data loss during a total power failure. A UPS uses a battery to keep your computer running temporarily during a power failure and lets you save your work and shut down your computer. You cannot run your computer for an extended period of time while using only the UPS.

# Maintaining and managing your hard drive

Regular maintenance can keep your hard drive operating efficiently and good file management can keep your system free of unwanted files while making important files secure and easier to find.

## Hard drive maintenance utility

If you are using the Windows NT operating system, you can help maintain the performance of your hard drive by regularly using Check Disk. If you are using another operating system, refer to your operating system documentation for available hard drive maintenance utilities.

### Using Check Disk in Windows NT

Bad sectors are parts of a hard drive or diskette that will not hold data. A lost allocation unit is a group of sectors that has lost its place in the table that the operating system uses to locate files. Check Disk checks the hard drive for bad sectors or lost allocation units and lets you fix them.

Use Check Disk from once a week to once a month, depending on how often you use your system. Also use Check Disk if you have any hard drive problems.

**To use Check Disk:**

1. Double-click the **My Computer** icon. The My Computer window opens.
2. Right-click the drive you want to check.
3. Select **Properties**. The drive's properties window opens.
4. Click the **Tools** tab.
5. At **Error-checking,** click **Check Now.** The Check Disk window opens.
6. Scan the entire hard drive by selecting **Scan for and attempt recovery of bad sectors**.
7. Click **Start.** Check Disk checks the drive for errors.
8. Follow any on-screen instructions for completing the scan.

# Hard drive management practices

By deleting unneeded files from your hard drive and managing the space that is automatically allocated for saving certain files, you can help maintain the performance of the hard drive. We suggest that you first check your hard drive for available space, then back up important files prior to deleting unneeded files, in case you delete important files by mistake.

## Checking hard drive space

In Windows NT, you can see a chart of the available hard drive space. If you are using another operating system, refer to your software documentation for available hard drive management utilities.

### ➲ To check hard drive space:

1. Double-click the **My Computer** icon on the desktop. The My Computer window opens.
2. Right-click the drive you want to check.
3. Select **Properties**. The drive's properties window opens. The **General** tab shows you the available and used space on the drive.

## Backing up files

Regularly backing up your files protects you from losing data and lets you keep fewer files on your hard drive. Back up old files to a large capacity disk drive or tape drive and delete the files from your hard drive. You can use the software that came with your tape backup drive or your large capacity disk drive to back up the files.

You can also back up files by running the Backup utility that came with your operating system. In Windows NT, Backup copies files to a tape drive.

### ➲ To run Backup in Windows NT:

1. Click **Start**, then select **Programs**, **Administrative Tools,** then **Backup**.
2. Follow the on-screen instructions.

## Deleting unneeded files

By deleting unneeded files from the hard drive, you free up space on the hard drive and help improve hard-drive performance. The following sections give you some simple ways to delete unneeded files.

### Deleting Windows temporary files

During normal operation, Windows constantly creates new temporary (.tmp) files. You can safely delete all but the most recent .tmp files.

#### To delete .tmp files:

1. Open Windows Explorer, then select **Tools**, **Find**, then **Files and Folders**.
2. In the **Named** text box, type ***.tmp**.
3. In the **Look in** drop down list, select your drive letter.
4. Click **Find Now**. The list of .tmp files appears.
5. Click **Modified** above the list. To see the **Modified** button, you may need to maximize the Find window. The list is sorted by date.
6. Highlight all the files in the list except those with the current date.
7. Press SHIFT + DELETE. A dialog box opens asking if you want to delete the files.
8. Click **Yes**. The files are deleted.

### Deleting temporary Internet files

As you visit Web sites, your browser stores temporary Internet files on your hard drive in a *memory cache* and a *disk cache*. Files in the memory cache are removed when you turn off your computer. Files are saved in the disk cache until the space designated for the cache is full. See your browser's Help files for instructions on emptying the disk cache.

You can save space on the hard drive by decreasing the size of the Internet file disk cache. See your browser's Help files for instructions.

### Emptying the Recycle Bin

When you delete a file from your hard drive in Windows NT, it is not immediately removed from the hard drive. Instead, the file is moved into the Recycle Bin. Because files are stored in the Recycle Bin and not deleted from the hard drive immediately, you can retrieve a file that you accidentally delete from the hard drive.

To delete all the files from the Recycle Bin, right-click the **Recycle Bin** icon on the desktop, then click **Empty Recycle Bin**.

You can save space on the hard drive by decreasing the size of the Recycle Bin.

### To decrease the size of the Recycle Bin:

1. Right-click the **Recycle Bin,** then select **Properties**.
2. At the Global tab, select either **Configure drives independently** or **Use one setting for all drives.**
3. If you are configuring drives independently, click the tab for the drive you want to configure.
4. Move the slider to set the size of the Recycle Bin. A good initial setting is 5%.
5. Click **OK**.

# Protecting your computer from viruses

A *virus* is a program that attaches itself to a program or data file on a computer, then spreads from one computer to another. Viruses can damage data, cause computers to malfunction, and can display annoying or offensive messages. Some viruses can go unnoticed for long periods of time because they are activated by a certain date or time. Protect your computer from viruses by:

- Using an anti-virus program to check files and programs that are on diskettes, attached to e-mail messages, or downloaded from the Internet. After you run the anti-virus program you can back up your files to diskettes, a separate hard drive, or a high-capacity storage drive.
- Keeping your anti-virus program updated.
- Obtaining all software from reputable sources and checking the software for viruses before installing it.
- Disabling macros on suspicious Microsoft Word and Excel files. These programs will warn you if a document that you are opening contains a macro that might have a virus.

### To remove a virus:

1. Find and remove the virus immediately using your anti-virus program.
2. Turn off your computer and leave it off for at least 30 seconds.
3. Turn on the computer and rescan for the virus.
4. If the virus is still on your computer, contact Gateway Client Care.

# System administration and control

Your server is equipped with server-management tools to enable administration and control of Windows NT or Windows 2000 environments. These tools are ManageX Event Manager and the Gateway™ server management software.

## ManageX Event Manager

ManageX lets the system administrator manage multiple systems on a Windows NT or Windows 2000 network from a single window, and implement commands and policies across the network with a single action. With this tool you can automate system management tasks, which can be triggered by specific events or at specified thresholds.

Additional information about the ManageX Event Manager can be found under **Documentation** on the Server Companion CD which came with your system.

## Gateway™ server management software

The Gateway™ server management software provides continuous, in-band monitoring, alerting, and management of your server. Information is provided on such things as system temperature, system fans, voltage and power supply conditions, system memory, and chassis intrusion.

Additional information about the Gateway™ server management software can be found under **Documentation** on the Server Companion CD which came with your system.

## System security

To help prevent unauthorized entry or use of the system, the system includes key locks on the chassis (to prevent entry) and the bezel door (to prevent use).

Security measures may also be set in the BIOS Setup utility which establish passwords and automatic system lockouts. The system also includes server management software that monitors the chassis intrusion switch.

## Mechanical locks and monitoring

The system includes a chassis intrusion switch. When the access cover is opened, the switch transmits an alarm signal to the system board, where server management software processes the signal.

## Software locks through the BIOS Setup utility

The Security tab in the BIOS (see "About the BIOS Setup utility" on page 67) provides several security features to prevent unauthorized access to the system. Once the security measures are enabled, access to the system is allowed only after you enter the correct password(s). For example, the security features let you:

- Set and enable supervisor and user passwords.
- Set Unattended Start mode to prevent keyboard or mouse input.
- Set user BIOS setup access level (full, limited, view only, or no access).
- Set Password Check for **setup only** or **always**.
- Enable Unattended Start mode which, when enabled, allows the host system to complete the boot process without a password, yet causes the keyboard and mouse to remain locked until the user password is enabled.

### Using passwords

If you set and enable a user password but not a supervisor password, enter the user password to boot the system with unlimited BIOS Setup access.

If you set and enable both a user and a supervisor password:

- Enter either one to boot the server and enable the keyboard and mouse.
- Enter the supervisor password for full access the BIOS Setup to change the system configuration.

### Changing passwords

To change or delete an existing user password, restart the system and press F1 to enter the BIOS Setup utility, then enter the password when the system asks for it during the POST routine. To change the password, select **Change User Password** from the **Security** menu, then enter and confirm the new password.

To change or delete an existing supervisor password, restart the system and press F1 to enter the BIOS Setup utility, then enter the supervisor password (not the user password) when the system asks for the password during the

POST routine. To change the supervisor password, select **Change Supervisor Password** from the **Security** menu, then enter and confirm the new password. To cancel the supervisor password, select **Change Supervisor Password** from the **Security** menu, enter the current supervisor password, then, when asked to confirm the new password, press ENTER without entering anything. The system will respond with the message "Password Uninstalled."

### Unattended start mode

Configure and enable the unattended start mode in the BIOS. When unattended start mode is in effect, you can boot the system and run the OS, but you must enter the user password to use the keyboard or mouse.

To enable the unattended start mode, you must first enable a user password, then enable unattended start mode, and finally set the password check mode to **Always**.

### Summary of software security features

The following table lists the software security features and describes what protection each offers. In general, to enable or set the features listed here, you must run the BIOS Setup utility and go to the Security tab. The table also refers to other BIOS menus and to the setup utility.

| Feature | Description |
|---|---|
| Unattended start mode | To enable the Unattended Start mode, you must first enable a user password, then enable Unattended Start mode, and finally set the Password Check mode to **Always.**<br>When the system is in Unattended Start mode, the system boots and runs the OS, but does not accept mouse or keyboard input until you enter the user password. |

| Feature | Description |
|---|---|
| Control access to the BIOS Setup utility (set supervisor password) | To control access to the system configuration, set a supervisor password and enable it through BIOS Setup utility. This password allows the supervisor to make changes to the BIOS Setup utility. The user may also be allowed to make changes to the BIOS Setup utility, depending on the user access level setting (**full**, **limited**, **view only**, or **no access**).<br>If both the supervisor and user passwords are enabled, either can be used to boot the system or enable the keyboard and/or mouse, unless the Unattended Start mode is enabled. If Unattended Start mode is enabled, only the user password may be used to enable the keyboard and mouse.<br>Once set, passwords can be disabled by deleting the password in the BIOS Setup or by changing the Password Clear switch. To change the switch, see “Setting the configuration switches” on page 70. |
| Control access to the system (set user password) | To control access to the system, set a user password and set Password Check to **Always**, using the BIOS Setup utility.<br>Once set, passwords can be disabled by deleting the password or by changing the Password Clear switch. To change the switch, see “Setting the configuration switches” on page 70. |
| Boot without keyboard | The system can boot with or without a keyboard. To enable the system to boot without a keyboard, go the the boot settings configuration under the **Advanced** menu in the BIOS Setup utility and select the System Keyboard **Absent** option. |
| Specify the boot sequence | The sequence you specify in the BIOS determines the boot order. If a password is enabled, and password check is set to **Always**, you are prompted for the password before the system boots fully. If a password is enabled, and the Unattended Start mode option is also enabled, the system boots fully but requires a password before accepting any keyboard or mouse input. |

# System recovery

We recommend that you take advanced precautions in case your hard drive is damaged or your BIOS or system files get corrupted. This will make it easier to restart your system and recover damaged files.

## Creating a startup diskette

If your computer hard drive is damaged, you may not be able to start the computer from the hard drive. A startup diskette is a bootable diskette that lets you start the computer and attempt to fix the problem.

When you set up Windows NT you are prompted to create a startup diskette. If you did not choose to create a startup diskette at that time, you may create one later by running the Windows NT upgrade/installation program.

### To create a startup diskette:

1. Go to the DOS Command Prompt, and change to the **C:\I386** subdirectory.
2. Type **winnt32/ox**, then press ENTER and follow the prompts.

## Using your Server Companion CD

The Server Companion CD included with your system can be used to:

- Install hardware drivers for a variety of operating systems
- Reinstall selected utilities
- Access system documentation

Instructions for each operating system are provided with the Server Companion CD.

# Cleaning Your System

7

## Cleaning the mouse

If the mouse pointer on the screen moves erratically when you move the mouse, the inside of the mouse may be dirty.

### To clean the mouse:

1. Turn off the computer, then disconnect the mouse cable from the mouse port.
2. Turn your mouse upside down and remove the roller ball cover.
3. Cup your hand under the mouse and turn your mouse right-side up. The roller ball should drop into your hand. If it does not, gently shake the mouse until the ball drops out of the socket.
4. Use adhesive tape to pick up any dust or lint on the surface of the ball.
5. Wipe away dirt or lint inside the ball socket with a lint-free cloth. You can also blow into the socket to remove dirt and lint. Use a cotton swab dipped in isopropyl alcohol to clean the rollers inside the socket.
6. Let surfaces dry completely.
7. Return the ball to the socket and replace the cover.

# Cleaning the keyboard

You should clean the keyboard occasionally to free it of dust and lint particles trapped under the keys. The easiest way to do this is to blow trapped dirt from under the keys using an aerosol can of air with a narrow, straw-like extension.

If you spill liquid on the keyboard, turn off the computer, then disconnect the keyboard. Turn the keyboard upside down to let the liquid drain. Let the keyboard dry for a few days before trying to use it again. If the keyboard does not work after it is dry, you may need a new one.

# Cleaning the monitor screen

Use a soft cloth and window cleaner to clean the monitor screen. Squirt a little cleaner on the cloth (never directly on the screen), then wipe the screen with the cloth.

# Cleaning the computer and monitor cases

**Caution**



When you clean the system, turn off the computer, monitor, and peripherals, then unplug the power cords and modem cord (if installed). Be careful not to drip liquid into the computer, monitor, and peripherals when cleaning the system.

Always turn off the computer and other peripherals before cleaning any components.

Use a damp, lint-free cloth to clean the computer case, monitor case, keyboard, speakers, and other parts of your system. Avoid abrasive or solvent cleaners because they can damage the finish on your components.

Your computer is cooled by air drawn in through the vents on the chassis and blown out through the power supply exhaust fan. Keep vents on the front and back of the chassis free of dust. With the computer turned off and unplugged, brush the dust away from the vents with a slightly damp cloth. Be careful not to drip any water into the vents. Do not attempt to clean dust from the inside the computer.

# 8 Troubleshooting

## Introduction

If your system does not operate correctly, re-read the instructions for the procedures you have performed. If an error occurs within a program, consult the documentation supplied with the software. This section identifies solutions to some possible problems.

# Troubleshooting checklist

Before turning on the system, make sure that:

- The power cord is connected to the AC power-in connector and an AC outlet.
- The AC outlet is supplying power.
- If a power strip is used, it is turned on, and the circuit breaker is set.
- The voltage selection switch on the system power supply reflects the proper voltage.

## Verifying your configuration

If your system is not operating correctly, the BIOS may contain an invalid configuration parameter. Open the BIOS Setup utility and check your configuration settings. (See “About the BIOS Setup utility” on page 67.)

## Troubleshooting guidelines

As you troubleshoot your system, keep the following guidelines in mind:

- Never remove the chassis cover while the computer is turned on.
- Do not attempt to open the monitor. Even if the power is disconnected, stored energy in the monitor components can inflict a painful or harmful shock.
- If a peripheral does not work, make sure that all connections are secure.
- If you see an error message on the screen, write it down, word for word. You may be asked about it when calling technical support.
- Only qualified personnel should open the system for maintenance.
- If you are qualified to maintain the system yourself, make sure you are properly grounded before opening the system chassis. See “Preventing static electricity discharge” on page 15 for more information on preventing electrostatic damage to the system.

# CD drive problems

### An audio CD produces no sound.

| Probable cause | Solution |
|---|---|
| The CD is loaded incorrectly | Make sure the label is facing up, then try again. |
| The speakers are not connected | Make sure the speaker cables are connected properly and securely. |
| The speaker volume is turned down | Check the volume control and turn it up if necessary. |
| The speakers may be muted through the Multimedia volume control | Click the speaker icon on the task bar. Make sure the **Mute** check box is not selected. |
| The speakers may be faulty | Connect a set of headphones to the line out jack to test the output. If they work, replace the speakers. |
| The sound card may not be installed correctly | Open the system, then reseat the sound card. Make sure the cables are connected properly. Some systems do not have sound cards because sound capabilities are built into the system board. |
| The CD drive audio cable may be installed incorrectly | Open the system and make sure the cables are connected properly. Some systems do not have sound cards because sound capabilities are built into the system board. |

### The system does not recognize the CD drive.

| Probable cause | Solution |
|---|---|
| The CD is not intended for PC use | Make sure the CD is PC compatible. |
| The CD is loaded incorrectly | Make sure the label is facing up, then try again. |
| The CD is scratched or dirty | Try cleaning the CD with a lint-free cloth. Make sure the CD is not scratched. |
| The CD drive needs to be added as new hardware | In the Control Panel window (**Start** \| **Settings** \| **Control Panel**), double-click **Add New Hardware**. Follow the on-screen instructions for adding the drive. |
| The secondary IDE device may be disabled | Restart your computer, then press F1 to open the BIOS Setup utility program. From the **Advanced \| IDE Configuration** menu, set the **IDE Controller** to **Both** and the **Secondary IDE Master** to **Auto**. |
| The CD cables are not installed correctly | Open the system and make sure all cables between the CD controller and the CD drive are connected correctly. |
| The CD drive may be defective | Replace the CD drive. |

# Diskette drive problems

### The system does not recognize the diskette drive.

| Probable cause | Solution |
|---|---|
| The diskette drive may be configured incorrectly | Restart your computer, then press F1 to open the BIOS Setup utility. In the **Advanced \| Floppy Configuration** menu, make sure that the diskette drive parameters are set correctly. |
| The drive cables are not connected properly | Open the system and make sure all cables are correctly connected to the system board. |

### The diskette drive will not read, write, or format.

| Probable cause | Solution |
|---|---|
| The diskette is not IBM formatted | Make sure the diskette you are trying to format is IBM compatible. If it is, try reformatting it. If it is not, get a compatible diskette. |
| The diskette is corrupted | Run Check Disk on the diskette. If errors are detected and corrected, try accessing the diskette again. |
| The diskette is write-protected | Make sure the write-protection window on the upper-right corner of the diskette is closed (unprotected). |

### The diskette drive LED illuminates continuously.

| Probable cause | Solution |
|---|---|
| The diskette is corrupted | Remove the diskette from the drive. If the light remains on, try restarting the system. |
| The cable to the drive is not connected properly | Open the system and make sure the cable is connected properly between the diskette drive and its controller. Make sure the pins are not bent or misaligned. |

# Hard drive problems

### The system does not recognize the SCSI drive.

| Probable cause | Solution |
|---|---|
| The SCSI chain is not properly terminated | Make sure the last device on the SCSI chain is properly terminated. |
| The drive is configured with a conflicting SCSI address | Change the device's SCSI address to one that is not currently being used by the system. |
| The cables are not connected correctly | Open the system and make sure the cable connections are correct. |

### The system does not recognize the IDE drive.

| Probable cause | Solution |
|---|---|
| The primary IDE device may be configured incorrectly | Restart your computer, then press F1 to open the BIOS Setup utility. From the **Advanced \| IDE Configuration** menu, set the **IDE Controller** to **Both** and the **Primary IDE Master** to **Auto**. |
| The drive may not be configured properly | Consult the hard drive user's guide for instructions on how to configure the drive. Configure the drive correctly. |
| The drive cables are not connected properly | Open the system and make sure all cables to the controller card are connected correctly. Some systems do not have IDE controller cards because the IDE controller is built into the system board. |
| The drive controller is not seated properly | Open the system and reseat the drive controller. Some systems do not have IDE controller cards because the IDE controller is built into the system board. |

# Memory and processor problems

### The system detected memory errors during start up.

| Probable cause | Solution |
|---|---|
| Memory was added or removed, and the new configuration was not saved in BIOS Setup utility | Open the BIOS Setup utility and save the new memory configuration. |
| The memory was installed incorrectly | Make sure the memory is seated and oriented correctly. |
| A memory chip is faulty | Replace the card with the faulty chip. Third-party diagnostic programs can help determine which chip or memory segment is failing. |

### The system does not recognize a new or second processor.

| Probable cause | Solution |
|---|---|
| The processor was installed incorrectly or was not seated properly in the socket | Check the installation. Make sure the processor is fully seated in its socket. The processor should be recognized automatically if it was installed correctly. |

# Modem problems

### The system does not recognize the modem.

| Probable cause | Solution |
|---|---|
| The modem has not been added as new hardware | Add the modem as new hardware. |
| The modem is not connected to a live phone jack | Make sure the line connected to the modem is working and plugged into the appropriate port on the modem (line port). |
| The modem is not configured with a valid interrupt or address | Check the system settings for possible conflicts. If one exists, correct the problem by selecting an available interrupt and address. |
| The phone jack is shared by another modem or telephone | If the modem shares the jack with another device, make sure the other device does not have the port open (for example, someone is on the phone, or another modem is in use). |

# Peripheral/adapter problems

### The system does not recognize a SCSI device.

| Probable cause | Solution |
|---|---|
| The device needs to be added as new hardware | In the Control Panel window (**Start** \| **Settings** \| **Control Panel**), double-click **Add New Hardware**. Follow the on-screen instructions for adding the device. |
| The SCSI ID may be invalid | Assign an available SCSI ID to the device. |
| The SCSI chain is not properly terminated | Make sure the last device on the SCSI chain is terminated. |
| The device cables are not installed correctly | Open the system and check all cables between the controller and the device. Install the cables correctly if necessary. |

### The system does not recognize an adapter card.

| Probable cause | Solution |
|---|---|
| The interrupt or I/O address is set incorrectly | Check the address configuration of the adapter card and make sure that it does not conflict with another card in the system. |
| The card was not configured through the software | Configure the card with the appropriate software. |
| The card was not installed correctly | Make sure that the jumpers are configured correctly, then reseat the card. |

# Printer problems

### The printer will not turn on.

| Probable cause | Solution |
|---|---|
| The printer is not connected to the system | Make sure the data cable is properly connected between the printer and the system. Check the connector and cable for bent or broken pins. |
| The printer is not plugged in | Make sure the power cable is plugged into a working power source. |
| The printer is not turned on | Make sure the printer's power switch is depressed or set to the On position. If power is applied to the printer, the green power LED should be illuminated. |
| The printer is defective | Try another printer, if one is available. |

### The printer is turned on but will not print.

| Probable cause | Solution |
|---|---|
| The printer is not connected to the system | Make sure the data cable is properly connected between the printer and the system. Check the connector and cable for bent or broken pins. |
| The printer is not designated as the default printer | If the printer that you are trying to print to is not the default printer, make sure you have selected it through the program's printer setup function. |
| The printer has not been added to the system. | In the Printers window (**Start \| Settings \| Printers**), double-click **Add Printer**. Follow the on-screen instructions for adding the new printer. |
| The printer is not on-line (ready) | Make sure the on-line or ready light is on, or the display indicates "Ready." |

### The printer prints garbled text.

| Probable cause | Solution |
| --- | --- |
| The wrong driver is being used for the selected printer | In the Printers window (**Start \| Settings \| Printers**), select the printer. From the **File** menu, select **Properties**. Make sure the printer is using the correct printer driver. If not, install the correct one. |

# System problems

### The system will not start up.

| Probable cause | Solution |
|---|---|
| The system is not connected to an AC outlet | Make sure the power cable(s) are connected correctly to an operating AC power source. |
| The voltage selection switch is not set correctly | Make sure the voltage selection switch is set to the correct power source. |

### The system is non-responsive.

| Probable cause | Solution |
|---|---|
| An error occurred while running a program or your system may be out of memory | Restart your computer by pressing the reset button. If the system is still non-responsive, press and hold in the power button for 4 seconds to turn the system off. Turn the system back on and follow the on-screen instructions. |
| The heatsink is not properly seated on the processor. | Reseat the heatsink. |

### The keyboard does not work.

| Probable cause | Solution |
|---|---|
| Keyboard is locked out when password is set | Enter the password. |
| A key was depressed while the system was starting up | Clear the sticking key, then turn off the system, wait for a few seconds, then turn the system back on. |
| The keyboard is not plugged in or connected properly | Make sure the cable is plugged in correctly. |
| Something spilled into the keyboard | Turn off the system. Turn the keyboard upside down to drain, then turn it over and let it dry before using the keyboard again. |
| The keyboard is defective | Try a keyboard you know is working. |

### The mouse does not work.

| Probable cause | Solution |
|---|---|
| Mouse is locked out when password is set | Enter the password. |
| The mouse is not plugged in or connected properly | Make sure the cable is plugged in correctly. |
| The mouse driver did not load when the system started | Load the appropriate mouse driver manually or contact technical support. |
| The mouse is defective | Try a mouse that you know is working. |

# Video problems

### The system is running but the screen is blank.

| Probable cause | Solution |
|---|---|
| The monitor is not turned on | Make sure the monitor is plugged in and turned on. If the monitor is turned on, the green power LED should illuminate. |
| The monitor's data cable is not connected | Make sure the monitor data cable is connected to the video controller on the back of the system. |
| The connector or cable is damaged | Check the connector and cable for bent or damaged pins. |
| The monitor is defective | Connect a working monitor to the computer. |
| The monitor brightness and contrast controls are turned down | Adjust the brightness and contrast knobs to the center position. |
| A DIMM is not seated properly - indicated by a beep | Open the system and reseat the DIMM. |

### The image on the screen is dim or difficult to read.

| Probable cause | Solution |
|---|---|
| The monitor brightness and contrast controls are turned down | Adjust the brightness and contrast knobs until the text becomes clear. |
| Light is glaring off the display | Position the monitor away from the sun or other light source. |
| The monitor may be old | Replace the monitor. |

### The color monitor displays everything in black and white.

| Probable cause | Solution |
|---|---|
| The system was turned on before the monitor | Make sure the monitor is turned on, then restart the system. |
| The display type is set incorrectly | In the Control Panel window (**Start | Settings | Control Panel**), double-click **Display**, set the display to the appropriate monitor type, then restart the system. |

### The displayed characters are garbled.

| Probable cause | Solution |
|---|---|
| The video cable is damaged | Make sure the cable and connectors are in good condition (no bent pins or broken wires). |
| The display setup is incorrect | In the Control Panel window (**Start | Settings | Control Panel**), double-click **Display** and check the settings. The correct video type should be selected, along with a supported resolution. Check your monitor and video controller documentation for details. |

### The video is distorted.

| Probable cause | Solution |
|---|---|
| The monitor controls are not properly adjusted | Adjust the monitor controls until the text becomes clear. (See your monitor documentation for more information.) |
| The connector or cable is damaged | Make sure the cable and connectors are in good condition (no bent pins or broken wires). |
| The surge protector or UPS is damaged | Disconnect the monitor power cable and connect it directly to the power source. |

| Probable cause | Solution |
| --- | --- |
| The monitor is too close to a source of electrical interference | Move the monitor away from sources of electrical interference, such as televisions, unshielded speakers, microwave ovens, fluorescent lights, and metal beams or shelves. |
| The monitor needs to be degaussed | Turn off the computer and monitor for at least a half hour, then restart the system. |

# Error messages

This section lists common error messages that you may see. These messages often indicate procedural errors such as an incorrect keystroke or a write-protected diskette. Some messages, however, may indicate a problem that requires you to consult the troubleshooting section of this manual.

| Error message | Solutions |
|---|---|
| Access denied | Try saving to a new file or diskette.<br>Move the write-protection tab over the hole on the back of the diskette. |
| Bad command or file name | Make sure you entered the right command.<br>Make sure the specified drive is correct, then try again.<br>If you are trying to exit MS-DOS to return to Windows, type **exit**, then press ENTER. |
| Base memory [xxx] expansion | This is an informational message only. No action is required. |
| Checking RAM on disk controller | Your BIOS configuration is incorrect. Open the BIOS Setup utility, then make sure the settings are correct. |
| CD drive is not recognized | See “The system does not recognize the CD drive.” on page 90 for a possible solution. |
| Data error | Use Check Disk on the drive with the error. |
| Decreasing available memory | Your BIOS configuration is incorrect. Open the BIOS Setup utility, then make sure the settings are correct. |
| Diskette drive is not recognized | See “The system does not recognize the diskette drive.” on page 91 for a possible solution. |
| Diskette drive 0 seek to track 0 failed | Open the BIOS Setup utility, then make sure the drive settings are correct.<br>Check the diskette drive cables. Make sure Pin 1 on the cable aligns with Pin 1 on the connector. |

| Error message | Solutions |
|---|---|
| Diskette drive reset failed | Open the BIOS Setup utility, then make sure the drive settings are correct.<br>Check the diskette drive cables. Make sure Pin 1 on the cable aligns with Pin 1 on the connector. |
| Diskette read failed - press F1 to retry boot | Make sure the boot disk contains the **Command.com** file.<br>Use the BIOS Setup utility (if necessary) to make sure your drive or controller is configured correctly.<br>Press F1 to restart the computer. |
| Gate A20 failure | You may have an XT keyboard connected to an AT system or vice versa. Make sure the keyboard is configured to work with the appropriate system. Some keyboards have a switch to select either AT or XT. |
| Hard disk controller failure | Make sure the hard drive cable is properly connected.<br>Open the BIOS Setup utility, then make sure that the correct drive type is selected. |
| Hard disk controller failure - press F1 to try reboot | The drive controller may be defective. Press F1 to try to restart the computer.<br>Try running Fdisk and DOS Format. For more information, refer to your operating system documentation. |
| Insert bootable media device | See “The system does not recognize the IDE drive.” on page 92 for a possible solution.<br>See “The system does not recognize the SCSI drive.” on page 92 for a possible solution.<br>Backup your files as soon as possible. |
| Insufficient disk space | Check the free space on the disk volume. If the volume is full or almost full, remove unnecessary files. |
| Invalid configuration information | Open the BIOS Setup utility, then make sure the settings are correct. |

| Error message | Solutions |
|---|---|
| Invalid password | Enter your password again, making sure to enter it correctly. Note that some passwords are case sensitive.<br>If you do not know the password, you may need to reinstall the software you are trying to access.<br>Startup passwords are stored in BIOS. If this password has been set and is unknown, you may be able to reset the password through system board jumper settings. |
| Keyboard clock line failure | Try a working keyboard.<br>Make sure the keyboard is compatible with the system. You may have to change the switch setting to AT. |
| Keyboard controller failure | Try a working keyboard.<br>Make sure the keyboard is compatible with the system. You may have to change the switch setting to AT. |
| Keyboard not detected | See “The keyboard does not work.” on page 99 for a possible solution.<br>Turn off the system, then check the keyboard cable. |
| Keyboard stuck key failure | Remove any objects that may be resting on the keyboard, then restart the system.<br>Check for sticky keys. Clean the keyboard if necessary. |
| Memory errors were detected while the system powered up | See “The system detected memory errors during start up.” on page 93 for a possible solution. |
| Memory size error | Enter the BIOS Setup utility, then save the memory configuration. |
| Non-system disk or disk error | Eject the diskette, then press ENTER.<br>If the diskette is bootable, check it for errors. |
| Not enough memory | Close all programs that are not currently in use. |

| Error message | Solutions |
|---|---|
| Print queue is full | Wait until the current print job has completed before sending another print job.<br>If you receive this error often, you need to add memory to the printer. |
| Printer is out of paper | Add paper to the printer.<br>Make sure the printer is online. |
| Required parameter missing | Make sure you entered the right command.<br>If you are trying to exit MS-DOS to return to Windows, type **exit**, then press ENTER. |
| Syntax error | Make sure you entered the right command.<br>If you are trying to exit MS-DOS to return to Windows, type **exit**, then press ENTER. |
| Time and date not set | Open the BIOS Setup utility, then set the system date and time. |
| Write-protect error | Move the write-protection tab over the hole on the back of the diskette. |

# Safety and Regulatory Information

A

## Important safety information

Your Gateway system is designed and tested to meet the latest standards for safety of information technology equipment. However, to ensure safe use of this product it is important that the safety instructions marked on the product and in the documentation are followed.

**Warning**



Please always follow these instructions to help ensure against personal injury and damage to your Gateway system.

## Setting up your system

- Read and follow all instructions marked on the product and in the documentation before you operate your system. Retain all safety and operating instructions for future use.
- Do not use this product near water or a heat source such as a radiator.
- Make sure you set up the system on a stable work surface.
- The product should only be operated from the type of power source indicated on the rating label.
- If your computer has a voltage selector switch, ensure that the switch is in the proper position for your area. The voltage selector switch is set at the factory to the correct voltage.
- Openings in the computer case are provided for ventilation. Do not block or cover these openings. Make sure you provide adequate space, at least 6 inches (15 cm), around the system for ventilation when you set up your work area. Never insert objects of any kind into the computers ventilation slots.
- Some products are equipped with a three wire power cord to ensure that the product is properly grounded when in use. The plug on this cord will only fit into a grounding-type outlet. This is a safety feature. If you are unable to insert the plug into an outlet, contact an electrician to install the appropriate outlet.
- If you use an extension cord with this system, make sure that the total ampere rating on the products plugged into the extension cord does not exceed the extension cord ampere rating.
- If your system is fitted with a TV Tuner, cable, or satellite receiver card, make sure that the antenna or cable system is electrically grounded to prevent against voltage surges and build up of static charges.

## Care during use

- Do not walk on the power cord or allow anything to rest on it.
- Do not spill anything on the system. The best way to avoid spills is to avoid eating and drinking near your system.
- Some products have a replaceable CMOS battery on the system board. There is a danger of explosion if the CMOS battery is replaced incorrectly. Replace the battery with the same or equivalent type recommended by the manufacturer. Dispose of batteries according to the manufacturers instructions.
- When the computer is turned off, a small amount of electrical current still flows through the computer. Always unplug all power cables and modem cables from the wall outlets before cleaning the system.
- Unplug the system from the wall outlet and refer servicing to qualified personnel if:
    - The power cord or plug is damaged.
    - Liquid has been spilled into the system.
    - The system does not operate properly when the operating instructions are followed.
    - The system was dropped or the cabinet is damaged.
    - The systems performance changes.

## Replacement parts and accessories

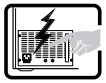
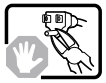
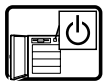
Use only replacement parts and accessories recommended by Gateway.

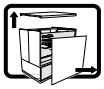
**Important**



Do not use Gateway products in areas classified as hazardous locations. Such areas include patient care areas of medical and dental facilities, oxygen laden environments, or industrial facilities.

# Warnings

| | WARNING: English (US) | AVERTISSEMENT: Français | WARNUNG: Deutsch | AVVERTENZA: Italiano | ADVERTENCIAS: Español |
|---|---|---|---|---|---|
|  | The power supply in this product contains no user-serviceable parts. There may be more than one supply in this product. Refer servicing only to qualified personnel. | Le bloc d'alimentation de ce produit ne contient aucune pièce pouvant être réparée par l'utilisateur. Ce produit peut contenir plus d'un bloc d'alimentation. Veuillez contacter un technicien qualifié en cas de problème. | Benutzer können am Netzgerät dieses Produkts keine Reparaturen vornehmen. Das Produkt enthält möglicherweise mehrere Netzgeräte. Wartungsarbeiten müssen von qualifizierten Technikern ausgeführt werden. | Rivolgersi ad un tecnico specializzato per la riparazione dei componenti dell'alimentazione di questo prodotto. È possibile che il prodotto disponga di più fonti di alimentazione. | El usuario debe abstenerse de manipular los componentes de la fuente de alimentación de este producto, cuya reparación debe dejarse exclusivamente en manos de personal técnico especializado. Puede que este producto disponga de más de una fuente de alimentación. |
|  | Do not attempt to modify or use the supplied AC power cord if it is not the exact type required. A product with more than one power supply will have a separate AC power cord for each supply. | Ne pas essayer d'utiliser ni modifier le câble d'alimentation CA fourni, s'il ne correspond pas exactement au type requis. Le nombre de câbles d'alimentation CA fournis correspond au nombre de blocs d'alimentation du produit. | Versuchen Sie nicht, das mitgelieferte Netzkabel zu ändern oder zu verwenden, wenn es sich nicht genau um den erforderlichen Typ handelt. Ein Produkt mit mehreren Netzgeräten hat für jedes Netzgerät ein eigenes Netzkabel. | Non modificare o utilizzare il cavo di alimentazione in c.a. fornito dal produttore, se non corrisponde esattamente al tipo richiesto. Ad ogni fonte di alimentazione corrisponde un cavo di alimentazione in c.a. separato. | No intente modificar ni usar el cable de alimentación de corriente alterna, si no corresponde exactamente con el tipo requerido. El número de cables suministrados se corresponden con el número de fuentes de alimentación de corriente alterna que tenga el producto. |
|  | The power button on the system does not turn off system AC power. To remove AC power from the system, you must unplug each AC power cord from the wall outlet or power supply. The power cord(s) is considered the disconnect device to the main (AC) power. The socket outlet that the system plugs into shall be installed near the equipment and shall be easily accessible. | Notez que le commutateur CC de mise sous tension /hors tension du panneau avant n'éteint pas l'alimentation CA du système. Pour mettre le système hors tension, vous devez débrancher chaque câble d'alimentation de sa prise. | Der Wechselstrom des Systems wird durch den Ein-/Aus-Schalter für Gleichstrom nicht ausgeschaltet. Ziehen Sie jedes Wechselstrom-Netzkabel aus der Steckdose bzw. dem Netzgerät, um den Stromanschluß des Systems zu unterbrechen. | L'interruttore attivato/disattivato nel pannello anteriore non interrompe l'alimentazione in c.a. del sistema. Per interromperla, è necessario scollegare tutti i cavi di alimentazione in c.a. dalle prese a muro o dall'alimentazione di corrente. | Nótese que el interruptor activado/desactivado en el panel frontal no desconecta la corriente alterna del sistema. Para desconectarla, deberá desenchufar todos los cables de corriente alterna de la pared o desconectar la fuente de alimentación. |
|  | **SAFETY STEPS:** Whenever you remove the chassis covers to access the inside of the system, follow these steps:<br>1 Turn off all peripheral devices connected to the system.<br>2 Turn off the system by pressing the power button.<br>3 Unplug all AC power cords from the system or from wall outlets.<br>4 Label and disconnect all cables connected to I/O connectors or ports on the back of the system.<br>5 Provide some electrostatic discharge (ESD) protection by wearing an antistatic wrist strap attached to chassis ground of the system—any unpainted metal surface—when handling components.<br>6 Do not operate the system with the chassis covers removed. | **CONSIGNES DE SÉCURITÉ** - Lorsque vous ouvrez le boîtier pour accéder à l'intérieur du système, suivez les consignes suivantes:<br>1 Mettez hors tension tous les périphériques connectés au système.<br>2 Mettez le système hors tension en mettant l'interrupteur général en position OFF (bouton-poussoir).<br>3 Débranchez tous les cordons d'alimentation c.a. du système et des prises murales.<br>4 Identifiez et débranchez tous les câbles reliés aux connecteurs d'E-S ou aux accès derrière le système.<br>5 Pour prévenir les décharges électrostatiques lorsque vous touchez aux composants, portez une bande antistatique pour poignet et reliez-la à la masse du système (toute surface métallique non peinte du boîtier).<br>6 Ne faites pas fonctionner le système tandis que le boîtier est ouvert. | **SICHERHEISMASSNAHMEN:** Immer wenn Sie die Gehäuseabdeckung abnehmen um an das Systeminnere zu gelangen, sollten Sie folgende Schritte beachten:<br>1 Schalten Sie alle an Ihr System angeschlossenen Peripheriegeräte aus.<br>2 Schalten Sie das System mit dem Hauptschalter aus.<br>3 Ziehen Sie den Stromanschlußstecker Ihres Systems aus der Steckdose.<br>4 Auf der Rückseite des Systems beschriften und ziehen Sie alle Anschlußkabel von den I/O Anschlüssen oder Ports ab.<br>5 Tragen Sie ein geerdetes Antistatik Gelenkband, um elektrostatische Ladungen (ESD) über blanke Metallstellen bei der Handhabung der Komponenten zu vermeiden.<br>6 Schalten Sie das System niemals ohne ordnungsgemäß montiertes Gehäuse ein. | **PASSI DI SICUREZZA:** Qualora si rimuovano le coperture del telaio per accedere all'interno del sistema, seguire i seguenti passi:<br>1 Spegnere tutti i dispositivi periferici collegati al sistema.<br>2 Spegnere il sistema, usando il pulsante spento/acceso dell'interruttore del sistema.<br>3 Togliere tutte le spine dei cavi del sistema dalle prese elettriche.<br>4 Identificare e sconnettere tutti i cavi attaccati ai collegamenti I/O od alle prese installate sul retro del sistema.<br>5 Qualora si tocchino i componenti, proteggersi dallo scarico elettrostatico (SES), portando un cinghia anti-statica da polso che è attaccata alla presa a terra del telaio del sistema – qualsiasi superficie non dipinta – .<br>6 Non far operare il sistema quando il telaio è senza le coperture. | **INSTRUCCIONES DE SEGURIDAD:** Cuando extraiga la tapa del chasis para acceder al interior del sistema, siga las siguientes instrucciones:<br>1 Apague todos los dispositivos periféricos conectados al sistema.<br>2 Apague el sistema presionando el interruptor encendido/apagado.<br>3 Desconecte todos los cables de alimentación CA del sistema o de las tomas de corriente alterna.<br>4 Identifique y desconecte todos los cables enchufados a los conectores E/S o a los puertos situados en la parte posterior del sistema.<br>5 Cuando manipule los componentes, es importante protegerse contra la descarga electrostática (ESD). Puede hacerlo si utiliza una muñequera antiestática sujetada a la toma de tierra del chasis — o a cualquier tipo de superficie de metal sin pintar.<br>6 No ponga en marcha el sistema si se han extraído las tapas del chasis. |

| | WARNING: English (US) | AVERTISSEMENT: Français | WARNUNG: Deutsch | AVVERTENZA: Italiano | ADVERTENCIAS: Español |
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|  | After you have completed the six SAFETY steps above, you can remove the system covers. To do this:<br>1 Unlock and remove the padlock from the back of the system if a padlock has been installed.<br>2 Remove and save all screws from the covers.<br>3 Remove the covers. | Une fois TOUTES les étapes précédentes accomplies, vous pouvez retirer les panneaux du système. Procédez comme suit :<br>1 Si un cadenas a été installé sur à l'arrière du système, déverrouillez-le et retirez-le.<br>2 Retirez toutes les vis des panneaux et mettez-les dans un endroit sûr.<br>3 Retirez les panneaux. | Nachdem Sie die oben erwähnten ersten sechs SICHERHEITSSCHRITTE durchgeführt haben, können Sie die Abdeckung abnehmen, indem Sie:<br>1 Öffnen und entfernen Sie die Verschlußeinrichtung (Padlock) auf der Rückseite des Systems, falls eine Verschlußeinrichtung installiert ist.<br>2 Entfernen Sie alle Schrauben der Gehäuseabdeckung.<br>3 Nehmen Sie die Abdeckung ab. | Dopo aver seguito i sei passi di SICUREZZA sopracitati, togliere le coperture del telaio del sistema come seque:<br>1 Aprire e rimuovere il lucchetto dal retro del sistema qualora ve ne fosse uno installato.<br>2 Togliere e mettere in un posto sicuro tutte le viti delle coperture.<br>3 Togliere le coperture. | Después de completar las seis instrucciones de SEGURIDAD mencionadas, ya puede extraer las tapas del sistema. Para ello:<br>1 Desbloquee y extraiga el bloqueo de seguridad de la parte posterior del sistema, si se ha instalado uno.<br>2 Extraiga y guarde todos los tornillos de las tapas.<br>3 Extraiga las tapas. |
|  | For proper cooling and airflow, always reinstall the chassis covers before turning on the system. Operating the system without the covers in place can damage system parts. To install the covers:<br>1 Check first to make sure you have not left loose tools or parts inside the system.<br>2 Check that cables, add-in boards, and other components are properly installed.<br>3 Attach the covers to the chassis with the screws removed earlier, and tighten them firmly.<br>4 Insert and lock the padlock to the system to prevent unauthorized access inside the system.<br>5 Connect all external cables and the AC power cord(s) to the system. | Afin de permettre le refroidissement et l'aération du système, réinstallez toujours les panneaux du boîtier avant de mettre le système sous tension. Le fonctionnement du système en l'absence des panneaux risque d'endommager ses pièces. Pour installer les panneaux, procédez comme suit :<br>1 Assurez-vous de ne pas avoir oublié d'outils ou de pièces démontées dans le système.<br>2 Assurez-vous que les câbles, les cartes d'extension et les autres composants sont bien installés.<br>3 Revissez solidement les panneaux du boîtier avec les vis retirées plus tôt.<br>4 Remettez le cadenas en place et verrouillez-le afin de prévenir tout accès non autorisé à l'intérieur du système.<br>5 Rebranchez tous les cordons d'alimentation c. a. et câbles externes au système. | Zur ordnungsgemäßen Kühlung und Lüftung muß die Gehäuseabdeckung immer wieder vor dem Einschalten installiert werden. Ein Betrieb des Systems ohne angebrachte Abdeckung kann Ihrem System oder Teile darin beschädigen. Um die Abdeckung wieder anzubringen:<br>1 Vergewissern Sie sich, daß Sie keine Werkzeuge oder Teile im Innern des Systems zurückgelassen haben.<br>2 Überprüfen Sie alle Kabel, Zusatzkarten und andere Komponenten auf ordnungsgemäßen Sitz und Installation.<br>3 Bringen Sie die Abdeckungen wieder am Gehäuse an, indem Sie die zuvor gelösten Schrauben wieder anbringen. Ziehen Sie diese gut an.<br>4 Bringen Sie die Verschlußeinrichtung (Padlock) wieder an und schließen Sie diese, um ein unerlaubtes Öffnen des Systems zu verhindern.<br>5 Schließen Sie alle externen Kabel und den AC Stromanschlußstecker Ihres Systems wieder an. | Per il giusto flusso dell'aria e raffreddamento del sistema, rimettere sempre le coperture del telaio prima di riaccendere il sistema. Operare il sistema senza le coperture al loro proprio posto potrebbe danneggiare i componenti del sistema. Per rimettere le coperture del telaio:<br>1 Controllare prima che non si siano lasciati degli attrezzi o dei componenti dentro il sistema.<br>2 Controllare che i cavi, dei supporti aggiuntivi ed altri componenti siano stati installati appropriatamente.<br>3 Attaccare le coperture al telaio con le viti tolte in precedenza e avvitarle strettamente.<br>4 Inserire e chiudere a chiave il lucchetto sul retro del sistema per impedire l'accesso non autorizzato al sistema.<br>5 Ricollegare tutti i cavi esterni e le prolunghe AC del sistema. | Para obtener un enfriamiento y un flujo de aire adecuados, reinstale siempre las tapas del chasis antes de poner en marcha el sistema. Si pone en funcionamiento el sistema sin las tapas bien colocadas puede dañar los componentes del sistema. Para instalar las tapas:<br>1 Asegúrese primero de no haber dejado herramientas o componentes sueltos dentro del sistema.<br>2 Compruebe que los cables, las placas adicionales y otros componentes se hayan instalado correctamente.<br>3 Incorpore las tapas al chasis mediante los tornillos extraídos anteriormente, tensándolos firmemente.<br>4 Inserte el bloqueo de seguridad en el sistema y bloquéelo para impedir que pueda accederse al mismo sin autorización.<br>5 Conecte todos los cables externos y los cables de alimentación CA al sistema. |
|  | A microprocessor and heat sink may be hot if the system has been running. Also, there may be sharp pins and edges on some board and chassis parts. Contact should be made with care. Consider wearing protective gloves. | Le microprocesseur et le dissipateur de chaleur peuvent être chauds si le système a été sous tension. Faites également attention aux broches aiguës des cartes et aux bords tranchants du capot. Nous vous recommandons l'usage de gants de protection. | Der Mikroprozessor und der Kühler sind möglicherweise erhitzt, wenn das System in Betrieb ist. Außerdem können einige Platinen und Gehäuseteile scharfe Spitzen und Kanten aufweisen. Arbeiten an Platinen und Gehäuse sollten vorsichtig ausgeführt werden. Sie sollten Schutzhandschuhe tragen. | Se il sistema è stato a lungo in funzione, il microprocessore e il dissipatore di calore potrebbero essere surriscaldati. Fare attenzione alla presenza di piedini appuntiti e parti taglienti sulle schede e sul telaio. È consigliabile l'uso di guanti di protezione. | Si el sistema ha estado en funcionamiento, el microprocesador y el disipador de calor pueden estar aún calientes. También conviene tener en cuenta que en el chasis o en el tablero puede haber piezas cortantes o punzantes. Por ello, se recomienda precaución y el uso de guantes protectores. |
|  | Danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Dispose of used batteries according to manufacturer's instructions. | Danger d'explosion si la batterie n'est pas remontée correctement. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le fabricant. Disposez des piles usées selon les instructions du fabricant. | Bei falschem Einsetzen einer neuen Batterie besteht Explosionsgefahr. Die Batterie darf nur durch denselben oder einen entsprechenden, vom Hersteller empfohlenen Batterietyp ersetzt werden. Entsorgen Sie ver-brauchte Batterien den Anweisungen des Herstellers entsprechend. | Esiste il pericolo di un esplosione se la pila non viene sostituita in modo corretto. Utilizzare solo pile uguali o di tipo equivalente a quelle consigliate dal produttore. Per disfarsi delle pile usate, seguire le istruzioni del produttore. | Existe peligro de explosión si la pila no se cambia de forma adecuada. Utilice solamente pilas iguales o del mismo tipo que las recomendadas por el fabricante del equipo. Para deshacerse de las pilas usadas, siga igualmente las instrucciones del fabricante. |

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|  | The system is designed to operate in a typical office environment. Choose a site that is:<br>■ Clean and free of airborne particles (other than normal room dust).<br>■ Well ventilated and away from sources of heat including direct sunlight.<br>■ Away from sources of vibration or physical shock.<br>■ Isolated from strong electromagnetic fields produced by electrical devices.<br>■ In regions that are susceptible to electrical storms, we recommend you plug your system into a surge suppresser and disconnect telecommunication lines to your modem during an electrical storm.<br>■ Provided with a properly grounded wall outlet.<br>■ Provided with sufficient space to access the power supply cords, because they serve as the product's main power disconnect. | Le système a été conçu pour fonctionner dans un cadre de travail normal. L'emplacement choisi doit être :<br>■ Propre et dépourvu de poussière en suspension (sauf la poussière normale).<br>■ Bien aéré et loin des sources de chaleur, y compris du soleil direct.<br>■ A l'abri des chocs et des sources de vibrations.<br>■ Isolé de forts champs électromagnétiques géenérés par des appareils électriques.<br>■ Dans les régions sujettes aux orages magnétiques il est recomandé de brancher votre système à un supresseur de surtension, et de débrancher toutes les lignes de télécommunications de votre modem durant un orage.<br>■ Muni d'une prise murale correctement mise à la terre.<br>■ Suffisamment spacieux pour vous permettre d'accéder aux câbles d'alimentation (ceux-ci étant le seul moyen de mettre le système hors tension). | Das System wurde für den Betrieb in einer normalen Büroumgebung entwickelt. Der Standort sollte:<br>■ sauber und staubfrei sein (Hausstaub ausgenommen);<br>■ gut gelüftet und keinen Heizquellen ausgesetzt sein (einschließlich direkter Sonneneinstrahlung);<br>■ keinen Erschütterungen ausgesetzt sein;<br>■ keine starken, von elektrischen Geräten erzeugten elektromagnetischen Felder aufweisen;<br>■ in Regionen, in denen elektrische Stürme auftreten, mit einem Überspannungsschutzgerät verbunden sein; während eines elektrischen Sturms sollte keine Verbindung der Telekommunikationsleitunge n mit dem Modem bestehen;<br>■ mit einer geerdeten Wechselstromsteckdose ausgerüstet sein;<br>■ über ausreichend Platz verfügen, um Zugang zu den Netzkabeln zu gewährleisten, da der Stromanschluß des Produkts hauptsächlich über die Kabel unterbrochen wird. | Il sistema è progettato per funzionare in un ambiente di lavoro tipo. Scegliere una postazione che sia:<br>■ Pulita e libera da particelle in sospensione (a parte la normale polvere presente nell'ambiente).<br>■ Ben ventilata e lontana da fonti di calore, compresa la luce solare diretta.<br>■ Al riparo da urti e lontana da fonti di vibrazione.<br>■ Isolata dai forti campi magnetici prodotti da dispositivi elettrici.<br>■ In aree soggette a temporali, è consigliabile collegare il sistema ad un limitatore di corrente. In caso di temporali, scollegare le linee di comunicazione dal modem.<br>■ Dotata di una presa a muro correttamente installata.<br>■ Dotata di spazio sufficiente ad accedere ai cavi di alimentazione, i quali rappresentano il mezzo principale di scollegamento del sistema. | El sistema está diseñado para funcionar en un entorno de trabajo normal. Escoja un lugar:<br>■ Limpio y libre de partículas en suspensión (salvo el polvo normal).<br>■ Bien ventilado y alejado de fuentes de calor, incluida la luz solar directa.<br>■ Alejado de fuentes de vibración.<br>■ Aislado de campos electromagnéticos fuertes producidos por dispositivos eléctricos.<br>■ En regiones con frecuentes tormentas eléctricas, se recomienda conectar su sistema a un eliminador de sobrevoltage y desconectar el módem de las líneas de telecomunicación durante las tormentas.<br>■ Provisto de una toma de tierra correctamente instalada.<br>■ Provisto de espacio suficiente como para acceder a los cables de alimentación, ya que éstos hacen de medio principal de desconexión del sistema. |

# Regulatory compliance statements

## American users

### FCC Part 15

This device has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or television reception. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio and television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.
- Use only shielded cables to connect peripherals to the system.

**Accessories**: This equipment has been tested and found to comply with the limits of a Class A digital device. The accessories associated with this equipment are: shielded video cable. These accessories are required to be used in order to ensure compliance with FCC rules.

**Caution**



Changes or modifications not expressly approved by Gateway could void the user's authority to operate the equipment.

## Declaration of Conformity

## Responsible Party

Gateway Companies, Inc.
610 Gateway Drive, North Sioux City, SD 57049
(605) 232-2000Fax: (605) 232-2023

Product: Gateway 6400

For unique identification of the product configuration, please submit the 10-digit serial number found on the product to the responsible party.

This device complies with Part 15 of the FCC Rules. Operation of this product is subject to the following two conditions; (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**Caution**



Changes or modifications not expressly approved by Gateway could void the user's authority to operate the equipment.

## FCC Part 68 (applicable to products fitted with USA modems)

Your modem complies with Part 68 of the Federal Communications Commission (FCC) rules. On the computer or modem card is a label that contains the FCC registration number and Ringer Equivalence Number (REN) for this device. If requested, this information must be provided to the telephone company.

An FCC compliant telephone line cord with a modular plug is required for use with this device. The modem is designed to be connected to the telephone network or premises wiring using a compatible modular jack which is Part 68 compliant. See installation instructions for details.

The Ringer Equivalence Number (REN) is used to determine the number of devices which may be connected to the telephone line. Excessive REN's on a telephone line may result in the devices not ringing in response to an incoming call. In most areas, the sum of REN's should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total REN's, contact the local telephone company.

If this device causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. The telephone company may request that you disconnect the equipment until the problem is resolved.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of this equipment. If this happens the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

This equipment cannot be used on telephone company provided coin service. Connection to party line service is subject to state tariffs. Contact the state public utility commission or public service commission for information.

When programming or making test calls to emergency numbers:

- Remain on the line and briefly explain to the dispatcher the reason for the call.
- Perform such activities in the off-peak hours such as early morning or late evenings.

The United States Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device to send any message via a telephone fax machine unless such message clearly contains in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent and an identification of the business or other entity, or other individual sending the message and the telephone number of the sending machine or such business, other entity, or individual. Refer to your fax communication software documentation for details on how to comply with the fax-branding requirement.

# Canadian users

## ICES-003

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe A prescrites dans le règlement sur le brouillage radioélectrique édicté par Industrie Canada.

## DOC Notice (for products fitted with an IC-compliant modem)

The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operation, and safety requirements. The Department does not guarantee the equipment will operate to the users' satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the inside wiring associated with a single-line individual service may be extended by means of a certified connector assembly. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

**Warning**



To avoid electrical shock or equipment malfunction you should not attempt to make electrical ground connections by yourself, but should contact the appropriate inspection authority or an electrician, as appropriate.

The **Ringer Equivalence Number** (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5.

# European users

## European directives

This Information Technology Equipment has been tested and found to comply with the following European directives:

- EMC Directive 89/336/EEC
  - EN 55022:1995 Class A
  - IEC 61000-2:1991
  - IEC 801-3:1984
  - IEC 801-4:1988
- Low Voltage Directive (Safety) 73/23/EEC as per EN 60950: 1992(A1/A2/A3/A4/A11)

### European telecommunication information (for products fitted with EU approved modems)

Marking by the symbol CE **** X indicates compliance of this equipment to the Telecom Terminal Equipment and Satellite Earth Stations Directive 98/13/EEC. Such marking is indicative that this equipment meets or exceeds the following technical standards:

CTR 21 (1998) - Attachment requirements for pan-European approval for connection to the analogue Public Switched Telephone Networks (PSTNs) of TE (excluding TE supporting voice telephony services) in which network addressing, if provided, is by means of Dual Tone Multi Frequency (DTMF) signaling.

**Warning**



Although this equipment can use either loop disconnect (Pulse) or DTMF (Tone) signaling, only the performance of the DTMF signaling is subject to regulatory requirements for correct operation. It is therefore strongly recommended that the equipment is set to use DTMF signaling for access to public or private emergency services. DTMF signaling also provides faster call set up.

This equipment has been approved to Council Decision 98/482/EEC--"CTR 21" for Pan-European single terminal connection to the Public Switched Telephone Network (PSTN). However, due to differences between the individual PSTNs provided in different countries, the approval does not, of itself, give an unconditional assurance of successful operation on every PSTN termination point. In the event of problems, you should contact Gateway customer support.

# Japanese users

### VCCI statement

This equipment is in the Class A category (Information Technology Equipment to be used in a residential area or an adjacent area thereto) and conforms to the standards set by the Voluntary Control Council for Interference by Information Technology Equipment aimed at preventing radio interference in such residential area. When used near a radio or TV receiver, it may become the cause of radio interference. Read instructions for correct handling.

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

# Australia and New Zealand users

## EMI statement

This device has been tested and found to comply with the limits for a Class A digital device, pursuant to the Australian/New Zealand standard AS/NZS 3548 set out by the Australian Communications Authority and Radio Spectrum Management Agency.

## New Zealand telecommunication statement (for products fitted with Telepermit approved modems)

The grant of a Telepermit for any item of terminal equipment indicates only that Telecom has accepted that the item complies with minimum conditions for connection to its network. It indicates no endorsement of the product by Telecom, nor does it provide any sort of warranty. Above all, it provides no assurance that any item will work correctly in all respects with another item of Telepermitted equipment of a different make or model, nor does it imply that any product is compatible with all of Telecom's network services.

This equipment shall not be set up to make automatic calls to the Telecom '111' Emergency Service

**Important**



Under power failure conditions, this telephone may not operate. Please ensure that a separate telephone, not dependent on local power, is available for emergency use.

Some parameters required for compliance with Telecom's Telepermit requirements are dependent on the equipment (PC) associated with this device. The associated equipment shall be set to operate within the following limits for compliance with Telecom's Specifications:

(a) There shall be no more than 10 calls to the same number within any 30 minute period for any single manual call initiation, and

(b) The equipment shall go on-hook for a period of not less than 30 seconds between the end of one attempt and the beginning of the next attempt.

The equipment shall be set to ensure that automatic calls to different numbers are spaced such that there is no less than 5 seconds between the end of one call attempt and the beginning of another.

The equipment shall be set to ensure that calls are answered between 3 and 30 seconds of receipt of ringing.

# Laser safety statement

All Gateway systems equipped with CD-ROM and DVD-ROM drives comply with the appropriate safety standards, including IEC 825. The laser devices in these components are classified a “Class 1 Laser Product” under a US Department of Health and Human Services (DHHS) Radiation Performance Standard. Should the unit ever need servicing contact an authorized service location.

**Warning**



Use of controls or adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure. To prevent exposure to laser beams, do not try to open the enclosure of a CD-ROM or DVD Drive.

# Television antenna connectors protection (for systems fitted with TV/cable TV tuner cards)

## External television antenna grounding

If an outside antenna or cable system is to be connected to your Gateway PC, be sure that the antenna or cable system is electrically grounded to provide some protection against voltage surges and built up static charges.

Article 810 of the National Electrical Code, ANSI/NFPSA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

## Lightning protection

For added protection of any Gateway product during a lightning storm or when it is left unattended or unused for long periods of time, unplug the product from the wall outlet and disconnect the antenna or cable system.

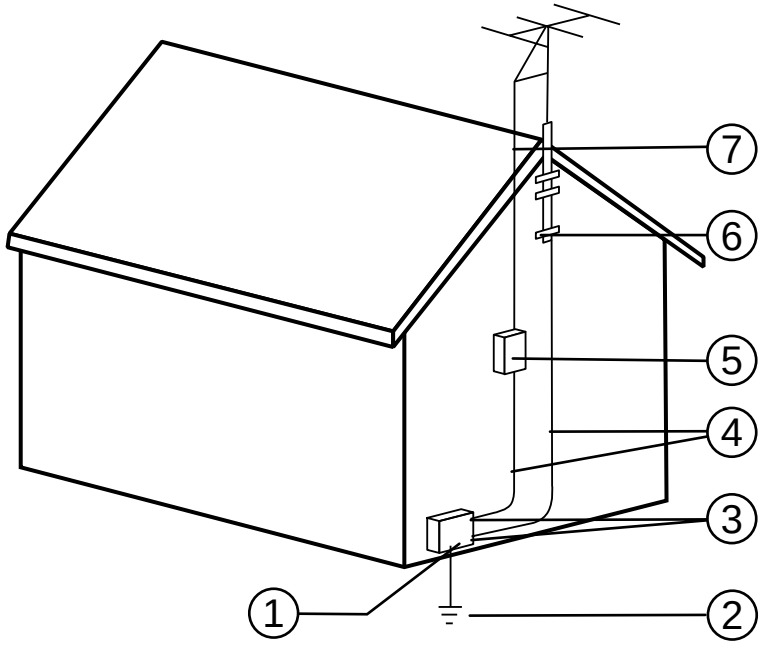
## Power lines

Do not locate the antenna near overhead light or power circuits, or where it could fall into such power lines or circuits. When installing or re aligning an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits. Contact with them could be fatal.

**Warning**



When installing or realigning an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits. Contact with them could be fatal.




**Antenna and Satellite Grounding**

| Reference | Grounding component |
|---|---|
| 1 | Electric service equipment |
| 2 | Power Service grounding electrode system (NEC Art 250, Part H) |
| 3 | Ground clamps |
| 4 | Grounding conductors (NEC Section 810-21) |
| 5 | Antenna discharge unit (NEC Section 810-20) |
| 6 | Ground clamp |
| 7 | Antenna lead in wire |

# Notices

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# B

# Reference Data

## Specifications

### System specifications

The following specifications are for the standard configuration. Your system may contain optional equipment. All specifications are subject to change.

| | |
|---|---|
| Mid Tower case size | 8.25 in. (20.955 cm) x 18.625 in. (47.3075 cm) x 19.125 in. (48.5775 cm) (W x D x H). |
| Processors | As many as two Pentium III™ (FC-PGA Socket 370) processors operating at 667 MHz and faster with 133 MHz front side bus. |
| RAM capacity | Four DIMM sockets on the system board support PC133-compliant, registered, Synchronous Dynamic Random Access Memory (SDRAM) ECC DIMMs. Maximum memory is 2 GB. |
| BIOS | Flash BIOS for easy updates from diskette. |
| IDE interfaces | Supports as many as four ATAPI/IDE devices (hard drives, CD drives, LS-120 drives) using two onboard PCI IDE adapters. |
| Diskette drive | Diskette controller integrated on the system board. |
| I/O ports | One parallel port, two serial ports, two USB ports, one PS/2 keyboard port, one PS/2 mouse port, video port, and RJ-45 LAN port. LPT and COM ports configurable from system setup program. No jumper settings required. |
| SCSI | Integrated dual-channel U160 LSI 53C1010 SCSI. |

| | |
|---|---|
| Network Interface | Integrated Intel 82559 PCI ethernet controller. |
| Video | Integrated ATI Rage-XL PCI-based VGA controller with 4 MB of PC100 SDRAM. |
| Expansion Slots | Seven PCI slots (two 64-bit/33 MHz and five 32-bit/33 MHz). |
| Power Supply | 300 watts. ATX power connector for easy power cable changeover. |
| Certification | FCC Class A, UL, CUL, CE Mark, VCCI, CB Scheme. |

# Environmental specifications

The following specifications identify maximum environmental conditions. At no time should the server run under conditions which violate these specifications.

| Variable | Requirements |
|---|---|
| Temperature | Maximum rate of change = 10° C per hour |
| Nonoperating | –48.3° to 65.5° C (–55° to 150° F) |
| Operating | 5° to 35° C (41° to 95° F); derated 0.5° C for every 1000 ft. (305 m) |
| Altitude | 10,000 ft. max |
| Humidity | |
| Nonoperating | 95% relative (noncondensing) at 30° C (86° F) |
| Operating wet bulb | Not to exceed 33° C (91.4° F) (with diskette drive or hard disk drive) |
| Shock | |
| Operating | 2.0 g, 11 msec, 1/2 sine |
| Packaged | Operational after 30-inch free fall (cosmetic damage might occur) |
| AC Input Power | |
| 100-120 V~ | 100-120 V~, 6 A, 50/60 Hz |
| 200-240 V~ | 200-240 V~, 3 A, 50/60 Hz |

# System I/O addresses

The following table shows the location in I/O space of all directly I/O-accessible registers.

| Address | Resource |
|---|---|
| 0000h - 000Fh | DMA Controller 1 |
| 0010h - 001Fh | DMA Controller 1 |
| 0020h - 0021h | Interrupt Controller 1 |
| 0022h - 0023h | |
| 0024h - 0025h | Interrupt Controller 1 |
| 0026h - 0027h | |
| 0028h - 0029h | Interrupt Controller 1 |
| 002Ah - 002Bh | |
| 002Ch - 002Dh | Interrupt Controller 1 |
| 002Eh - 002Fh | Super I/O Index and Data Ports |
| 0030h - 0031h | Interrupt Controller 1 |
| 0032h - 0033h | |
| 0034h - 0035h | Interrupt Controller 1 |
| 0036h - 0037h | |
| 0038h - 0039h | Interrupt Controller 1 |
| 003Ah - 003Bh | |
| 003Ch - 003Dh | Interrupt Controller 1 |
| 003Eh - 003Fh | |
| 0040h - 0043h | Programmable Timers |
| 0044h - 004Fh | |
| 0050h - 0053h | Programmable Timers |
| 0054h - 005Fh | |

| Address | Resource |
|---|---|
| 0060h, 0064h | Keyboard Controller |
| 0061h | NMI Status and Control Register |
| 0063h | NMI Status and Control Register |
| 0065h | NMI Status and Control Register |
| 0067h | NMI Status and Control Register |
| 0070h | NMI Mask (bit 7) and RTC Address (bits 6::0) |
| 0072h | NMI Mask (bit 7) and RTC Address (bits 6::0) |
| 0074h | NMI Mask (bit 7) and RTC Address (bits 6::0) |
| 0076h | NMI Mask (bit 7) and RTC Address (bits 6::0) |
| 0071h | RTC Data |
| 0073h | RTC Data |
| 0075h | RTC Data |
| 0077h | RTC Data |
| 0080h - 008Fh | DMA Low Page Register |
| 0090h - 0091h | DMA Low Page Register |
| 0092h | System Control Port A (PC-AT control Port) |
| 0093h - 009Fh | DMA Low Page Register |
| 0094h | Video Display Controller |
| 00A0h - 00A1h | Interrupt Controller 2 |
| 00A4h - 00A15 | Interrupt Controller 2 |
| 00A8h - 00A19 | Interrupt Controller 2 |
| 00Ach - 00Adh | Interrupt Controller 2 |
| 00B0h - 00B1h | Interrupt Controller 2 |
| 00B2h | Advanced Power Management Control |
| 00B3h | Advanced Power Management Status |
| 00B4h - 00B5h | Interrupt Controller 2 |

| Address | Resource |
|---|---|
| 00B8h - 00B9h | Interrupt Controller 2 |
| 00BCh - 00BDh | Interrupt Controller 2 |
| 00C0h - 00DFh | DMA Controller 2 |
| 00F0h | Clear NPX error |
| 00F8h - 00FFh | x87 Numeric Coprocessor |
| 0102h | Video Display Controller |
| 0170h - 0177h | Secondary Fixed Disk Controller (IDE) |
| 01F0h - 01F7h | Primary Fixed Disk Controller (IDE) |
| 0200h - 0207h | Game I/O Port |
| 0220h - 022Fh | Serial Port A |
| 0238h - 023Fh | Serial Port B |
| 0278h - 027Fh | Parallel Port 3 |
| 02E8h - 02Efh | Serial Port B |
| 02F8h - 02FFh | Serial Port B |
| 0338h - 033Fh | Serial Port B |
| 0370h - 0375h | Secondary Diskette |
| 0376h | Secondary IDE |
| 0377h | Secondary IDE/Diskette |
| 0378h - 037Fh | Parallel Port 2 |
| 03B4h - 03Bah | Monochrome Display Port |
| 03BCh - 03BFh | Parallel Port 1 (Primary) |
| 03C0h - 03CFh | Video Display Controller |
| 03D4h - 03DAh | Color Graphics Controller |
| 03E8h - 03EFh | Serial Port A |
| 03F0h - 03F5h | Diskette Controller |
| 03F6h - 03F7h | Primary IDE - Sec. Diskette |

| Address | Resource |
|---|---|
| 03F8h - 03FFh | Serial Port A (Primary) |
| 0400h - 043Fh | DMA Controller 1, Extended Mode Registers |
| 04D0h - 04D1h | Interrupt Controllers 1 and 2 Control Register |
| 0678h - 067Ah | Parallel Port (ECP) |
| 0778h - 077Ah | Parallel Port (ECP) |
| 07BCh - 07BEh | Parallel Port (ECP) |
| 0CA0 - CA3h | BMC Registers |
| 0CF8h | PCI CONFIG_ADDRESS Register |
| 0CF9h | NBX Turbo and Reset control |
| 0CFCh | PCI CONFIG_DATA Register |
| 46E8h | Video Display Controller |

# Memory map

| Address Range (hex) | Amount | Function |
|---|---|---|
| 0 to 07FFFFh | 640 KB | DOS region, base system memory |
| 0A0000h to 0BFFFFh | 128 KB | Video or SMM memory |
| 0C0000h and 0DFFFFh | 128 KB | Expansion card BIOS and buffer area |
| 0E0000h to 0FFFFFh | 128 KB | System BIOS |
| 0E0000h to 0EFFFFh | 2 MB | Extended system BIOS |
| FC000000h to FFFFFFFFh | 64 MB | PCI memory space |

# Interrupts

The following table suggests a logical interrupt mapping of interrupt sources. It reflects a typical configuration, but you can change these interrupts. Use the information to determine how to program each interrupt. The actual interrupt map is defined using configuration registers in the I/O controller. I/O Redirection Registers in the I/O APIC are provided for each interrupt signal. The signals define hardware interrupt signal characteristics for APIC messages sent to local APIC(s).

**Important**



If you disable either IDE controller to free the interrupt for that controller, you must physically unplug the IDE cable from the system board. Simply disabling the drive by configuring the SSU option does not make the interrupt available.

| Interrupt | I/O APIC Level | Description |
|---|---|---|
| INTR | INT0 | Processor interrupt |
| NMI | N/A | NMI from PIC to processor |
| IRQ1 | INT1 | Keyboard interrupt |
| Cascade | INT2 | Interrupt signal from second 8259 |
| IRQ3 | INT3 | Serial port A or B interrupt from SIO device (you can configure either) |
| IRQ4 | INT4 | Serial port A or B interrupt from SIO device (you can configure either) |
| IRQ5 | INT5 | Parallel port II |
| IRQ6 | INT6 | Diskette port |
| IRQ7 | INT7 | Parallel port |
| IRQ8_L | INT8 | RTC interrupt |
| IRQ9 | INT9 | Signal control interrupt (SCI) used by ACPI-compliant operating system |

| Interrupt | I/O APIC Level | Description |
|---|---|---|
| IRQ10 | INT10 | |
| IRQ11 | INT11 | |
| IRQ12 | INT12 | Mouse interrupt |
| IRQ13 | INT13 | Co-processor interrupt |
| IRQ14 | INT14 | Compatibility IDE interrupt from primary channel IDE devices 0 and 1 |
| IRQ15 | INT15 | |
| SMI_L | | System management interrupt - general purpose indicator sourced through the PID to the processors |

# DMA usage

The following table lists the direct memory access (DMA) channels that the system typically uses and which ones are available for use by add-in devices.

| DMA | Resource |
|---|---|
| 0 | Cascade |
| 1 | Available |
| 2 | Floppy Controller |
| 3 | Available |
| 4 | Redirect Cascade |
| 5 | Available |
| 6 | Available |
| 7 | Available |

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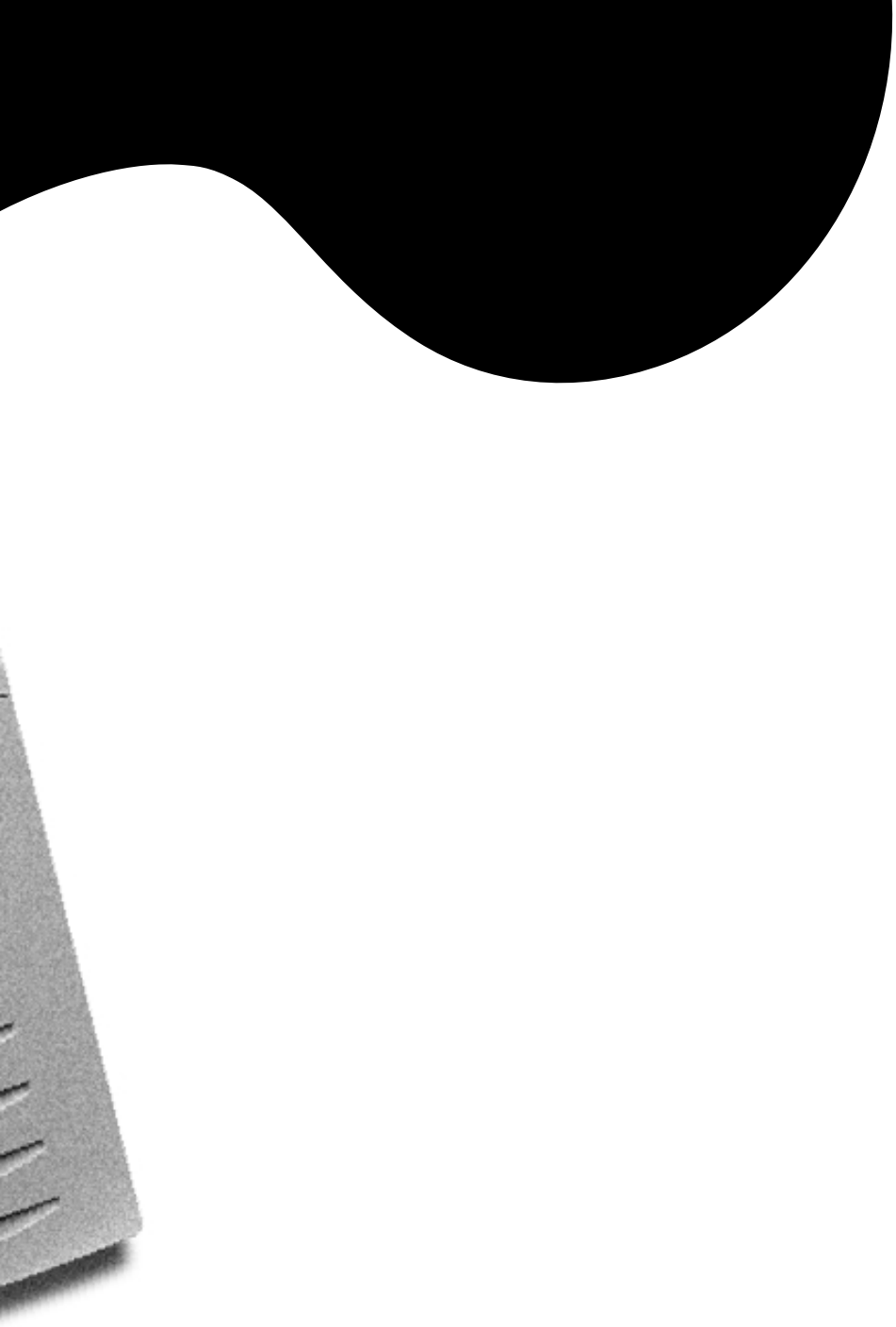
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